MAXIMUM PC

Microsoft®

Windows Vista™

EXPOSED

An Insider's Guide to Supercharging Windows Vista

LEARN THE TRICKS OF VISTA MASTERS!

EVERYTHING YOU NEED TO KNOW ABOUT MICROSOFT'S HOT NEW OS!

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Mark Edward Soper

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MAXIMUM PC

Microsoft® Windows Vista™ EXPOSED

Mark Edward Soper

que®
800 East 96th Street, Indianapolis, Indiana 46240 USA

Maximum PC Microsoft® Windows Vista™ Exposed

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CONTENTS AT A GLANCE

Introduction 1

Part I: Introducing Windows Vista, 3

1 Welcome to Windows Vista 5
2 The Many Editions of Windows Vista 23

Part II: Getting to Work with Vista, 35

3 Installing Windows Vista 37
4 Mastering the Vista User Interface 73
5 Vista Tools for Faster and Better File Organization 97
6 Mastering Your Hardware and Environment with Vista 121
7 Managing Your Contacts with Vista 151

Part III: Windows Vista at Play: Entertainment, Internet, and Networking, 173

8 Mastering Windows Media Player 11 175
9 Windows Media Center the Vista Way 219
10 Gaming with Windows Vista 247
11 Internet the Windows Vista Way 267
12 Building a Home Network the Windows Vista Way 289

Part IV: Keeping Windows Vista Safe with Backup and Troubleshooting Tools, 309

13 Burn, Baby, Burn! Backup Inferno 311
14 Protecting Windows Vista 327
15 Troubleshooting and Maintaining Windows Vista 353

Index 385

TABLE OF CONTENTS

A Hard-Core Computer Enthusiast's View of Windows Vista 1
How This Book Is Organized 2
Special Features 2

I Introducing Windows Vista

1 Welcome to Windows Vista 5
What's New and Improved in Windows Vista 5
  New GUI and Desktop Goodies in Windows Vista 7
  Better, Faster Menus 8
  Vista's Multimedia Applications 9
  Gaming Goodies in Vista 12
  Vista's Communications Applications 13
  Supercharged File Management in Vista 16
  System Management 17
  Security Is Job 1 in Windows Vista 20
Getting the Features You Want in Vista 22
2 The Many Editions of Windows Vista 23
What Version of Vista Is Right for Me? 23
  Which Vista Edition Has Your Favorite Features? 24
  The Power User's Favorites 30
  The Rest 31
  Differences in Non-U.S. Vista Editions 31
  Upgrading Vista Edition Features 31
Supported Upgrade Paths 33

II Getting to Work with Vista

3 Installing Windows Vista 37
How to Figure Out Which Installation Method Is Right for You 37
Why Clean Install Rules! 38
  Alternatives to a Clean Install 38
  Before You Install Vista 39
Running a Clean Install 42
  Setting Up the Installation 43
  Disk Preparation Options 44
  Configuring Vista 48
Clean Installation from an Upgrade DVD 51
Dual-Booting Vista and Your Old Windows 53
  Creating a Primary Partition for a Dual-Boot Install 54
  Installing Vista as a Dual-Boot Option 56

Seeing System Details .59

Transferring Settings with Windows Easy Transfer .61
  Selecting a Transfer Method .63
  Collecting Your Existing Files with Windows Easy Transfer .66
  Transferring Information to Your New Computer .69

4 Mastering the Vista User Interface 73

The Vista Desktop—Some Things Borrowed, Some Things New .73

Using Gadgets and the Windows Sidebar .74
  Understanding Gadgets .74
  Configuring Windows Sidebar .77

The New and Improved Vista Start Menu .77
  Using Search .78
  Using All Programs .80
  Customizing the Start Menu .81
  Customizing the Taskbar, Notification Area, and Toolbars .83

Customizing the Desktop .84
  Customizing Icon Sizes and Arrangements .84
  Personalizing Your Desktop .85
  Using Speech Recognition .91

Moving Between Open Programs .92

Sleep, Shutdown, and Other Options .94

User Interface Best Practices .95

5 Vista Tools for Faster and Better File Organization 97

Take Control of Your Data with Windows Vista's Revamped Explorers .97

Using Explorers .100
  Using the Documents Explorer .100
  Using the Pictures Explorer .101
  Using the Music Explorer .103
  Using Computer Explorer .104
  Using Other Explorers .106
  Working with Organize, Views, and Open Menus .107
  Finding Recent Documents .108
  Sorting, Grouping, and Filtering Documents .108
  Working with Tags and Image Metadata .110
  Unleashing Right-Click Power .113

Using Saved Searches .115
  Creating and Saving Customized Searches .115
  Customizing Favorite Links .117

File Management Tips and Tricks .118
  File Management Best Practices .118
  File Management Practices to Avoid .119

6 **Mastering Your Hardware and Environment with Vista** **121**

Using the Windows Vista Control Panel to Administer and Configure Your PC 121

Control Panel Categories 123

System Administration with Control Panel 123
  Welcome Center 124
  System 125
  Power Options 127
  Indexing Options 128
  Performance Information and Tools 129
  Windows Anytime Upgrade 135
  Offline Files 136
  Sync Center 137
  Printers 138
  AutoPlay 139
  Sound 141
  Color Management 142
  Default Programs 143
  Date and Time 143
  Windows Mobility Center 144

Improving Performance with ReadyBoost 145
  Checking Your USB Drive for ReadyBoost Compatibility 145

Disk Management 146
  Converting a Drive to NTFS 147

7 **Managing Your Contacts with Vista** **151**

Staying in Touch with Windows Vista's New Email, Meeting, Calendar, and Fax Tools 151

Using Windows Mail 152
  Moving from Outlook Express to Windows Mail 152
  Stopping Junk Email 153
  Accessing Microsoft Communities with Windows Mail 154
  Integration with Windows Contacts and Calendar 155

Using Windows Contacts 155
  Creating and Importing Contacts 156
  Creating a Contact Group 158

Using Windows Meeting Space 159
  Starting a Meeting 159
  Sharing a Program or the Desktop 160
  Using Handouts 162
  Wrapping Up the Meeting 163

Using Windows Calendar 163
  Adding Appointments and Using Reminders 164
  Inviting Participants 165

Publishing, Importing, and Combining Calendars 165
Printing Your Calendar 166

Using Windows Fax and Scan 167
Configuring the Fax Service 167
Configuring Fax and Sender Settings 168
Sending and Receiving Faxes 168
Scanning Documents with Windows Fax and Scan 169

Best and Worst Practices in Contact Management 170
Best Contact Management Practices 170
Contact Management Practices to Avoid 171

III Windows Vista at Play: Entertainment, Internet, and Networking

8 Mastering Windows Media Player 11 175

How Microsoft's New Media Player Is the Master of Its Domain 175

WMP 11's Play Controls 176
Playback Controls 177
Classic Menus 179

Configuring WMP 11's Options 183

Working with Audio in WMP 11 189
Music Library Viewing Options 189
Searching for Media with WordWheel 190
Using the Now Playing Menu 191
Using Visualizations 192
Ripping Music with WMP 11 194
Retrieving and Editing CD Information 196
Creating Playlists 200
Portable Media Player Support 202
Burning a CD or DVD 208

Playing Video in WMP 11 210
Playing Videos 211
Playing DVDs with WMP 11 211
WMP 11 and TV Recordings 213

Media Sharing and Your Home Network 214

Windows Media Player Tips and Tricks 215
Playback 216
CD and DVD Burning 216
DVD Playback 217
Video and TV Playback 217

9 Windows Media Center the Vista Way 219

Taking Live Media from Your Windows Desktop to Your Home Theater System—And Beyond 219

Windows Media Center 101 .219
  Using the WMC Interface .220
  Options to Make Windows Media Center Better .221

Configuring and Using Windows Media Center .222
  Configuring TV Setup .223
  Configuring Your Display .223
  Speaker Configuration .224
  Setting Up Media Libraries .224
  Other Configuration Options .225
  Viewing TV and Movies .225
  Recording TV Programs and Movies .227
  Enjoying Music with WMC .228
  Listening to FM Radio .229
  Viewing Pictures and Videos .231
  Using Online Media and the Program Library .232
  Using Search .233
  Using Tasks .233
  Burning a CD/DVD .234
  Synchronizing to a Device .235

Using the New Windows Movie Maker .235
  Windows Movie Maker and the WDDM .236
  Using Windows Movie Maker's New Features .236

Using Windows Photo Gallery .239
  Opening Windows Photo Gallery .239
  Working with an Individual Photo .239
  Working with Your Photo Collection .242

Best and Worst Practices for Media Tools .243
  Windows Media Center Best and Worst Practices .244
  Windows Movie Maker Best and Worst Practices .244
  Windows Photo Gallery Best and Worst Practices .245

10 Gaming with Windows Vista **247**

How Windows Vista Improves the Gaming Experience .247

Playing Games Through the Games Explorer .248
  Adding Games to Games Explorer .250
  Working with ESRB Ratings .251
  WEI Ratings and Vista Gaming .252
  Playing and Managing Games .254

DirectX 10, the Future of Windows Gaming .257

Dealing with Limited 3D Driver Settings .258

Solving Problems with Gaming Audio .259

Solving Problems with Legacy Games .260
Using the Program Compatibility Wizard and Compatibility Tab .260
Rolling Out the Big Guns: Virtualization and Gaming .261
Gaming Tips and Tricks .265

11 Internet the Windows Vista Way **267**
How IE 7 Makes Web Browsing Both More Secure and More Powerful .267
IE 7's New User Interface .268
Using Tabbed Browsing .268
Navigating IE 7's New Menu System .269
Creating and Using Favorites .270
Viewing and Subscribing to RSS Feeds .272
Better Page Viewing with Zoom .273
Printing Web Pages .274
Securing Your Online Experience with IE 7 .275
How Protected Mode Protects Your PC .275
IE 7 Stops Phishing .276
Managing Pop-Ups and Add-Ons .280
Troubleshooting Add-Ons .281
New and Improved Internet Options .281
Configuring and Using New General Options .282
New Content Control and Feeds Features .283
IE 7 Best and Worst Practices .285
IE 7 Best Practices .286
IE 7 Practices to Avoid .286

12 Building a Home Network the Windows Vista Way **289**
How Vista Makes Home Networking Better .289
Connecting to a Wireless Network .290
Connecting to a "Hidden" Wireless Network .292
Set Network Location .293
Using the Network and Sharing Center .294
Understanding Network Discovery .294
Configuring Network Discovery and Sharing .296
Using the Network Explorer .297
Using the Network Map .298
Managing Wireless Network Connections .300
Troubleshooting Your Network Connection .302
Sharing Folders and Printers .303
Networking Best and Worst Practices .306
Best Networking Practices .306
Networking Practices to Avoid .306

IV Keeping Windows Vista Safe with Backup and Troubleshooting Tools

13 Burn, Baby, Burn! Backup Inferno **311**
Integrated CD and DVD Support 311
Burning a Data CD or DVD 312
  Creating a Live File System Disc 312
  Creating a Mastered Disc 313
Burning a Video DVD 316
  Setting Up DVD Options 317
  Customizing and Burning Your Video DVD 318
Windows Backup and Restore Center 319
  Backup Strategies for Easy System Recovery 320
  Selecting the Right Media for Your Backup 321
Creating an Image Backup 321
  Backing Up to DVD 321
Creating a File and Folder Backup 322
CD and DVD Recording Tips and Tricks 324

14 Protecting Windows Vista **327**
Computing in Vista's More Secure World 327
A More Secure Operating System, By Design 328
Managing User Accounts and Family Safety 329
  Understanding User Accounts 329
  Using Parental Controls 333
  Using Windows CardSpace 336
Using Windows Security Center 338
Using Windows Defender 340
Using Windows Firewall 342
  Changing Defaults for Windows Firewall 343
Using Local Security Policy 347
Best and Worst Security Practices 350
  Best Security Practices 350
  Security Practices to Avoid 351

15 Troubleshooting and Maintaining Windows Vista **353**
How Windows Vista Makes Maintenance and Troubleshooting Easier 353
Using Windows Update and Microsoft Update 354
  Welcome to Microsoft Update 356
  Discovering What Windows Update Has Updated 356
Disk Maintenance 357
  Using Error-checking 357
  Using Defragmentation 359

  Using Disk Cleanup .360

Using Task Scheduler .361

System Diagnostics .364
  Using Memory Diagnostics .364
  Using Problem Reports and Solutions .366
  System Configuration (MSConfig) .367
  Using Device Manager .370
  Using Reliability and Performance Monitor .375

Using the Windows Vista Recovery Environment .379
  Using Startup Repair .380
  Using System Restore .381
  Using the Command Prompt .382
  Restoring a Complete PC Backup and Restore Image .383

Troubleshooting and Maintenance Best Practices .384

Index **385**

About the Author

Mark Edward Soper has taught computer troubleshooting and other technical subjects to thousands of students from Maine to Hawaii since 1992. Mark has used almost every version of Microsoft Windows starting with version 1.04 and has contributed chapters to *Special Edition Using Windows Millennium Edition*, all editions of the *Special Edition Using Microsoft Windows XP* series, *Special Edition Using Microsoft Windows Vista*, and *Easy Windows Vista*. Mark blogs on Windows Vista at his Amazon.com blog.

Mark is the author or coauthor of many books on a variety of technology subjects, including *Upgrading and Repairing Networks, 5th Edition*, *Upgrading and Repairing Servers*, *Leo Laporte's PC Help Desk*, *Absolute Beginner's Guide to Home Automation*, and *Absolute Beginner's Guide to Home Networking*, as well as books on digital photography, broadband Internet, computer upgrading, and A+ certification. Mark is currently writing *Unleashing Microsoft Windows Vista Media Center* and a new A+ certification study guide. He is a regular contributor to *Maximum PC* magazine and writes the Windows blog for the *Maximum PC* website.

When he's not working on technology projects, Mark enjoys photography, researching the history of transportation, church activities, and his family.

Dedication

For Linus, Vivian, and Alice. Enjoy life, and experience more of it through technology.

Acknowledgments

This book is the 18th book with my name on the outside, but many others contributed to the publishing process.

Above all, I want to thank God for the opportunity to share what I've learned about technology and media with a growing audience all around the world.

I also want to thank Cheryl, my wife, for her encouragement and love during a very protracted development process—it's the closest *I'll* ever get to having a baby!

I also want to thank my ever-growing family for their help and support. In particular, my son-in-law Hugh for capturing the screen shots used in many chapters, and my son Jeremy for critiquing the gaming chapter and for finding Fraps, the only screen capture software I know of that can grab full-screen captures inside Windows Media Center (try it for yourself at http://www.fraps.com).

Hats off to the gang at *Maximum PC* magazine, in particular Will Smith and Gordon Mah Ung, for giving me the opportunity to become a part of the hardest-hitting and most demanding technology magazine family around.

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A Hard-Core Computer Enthusiast's View of Windows Vista

INTRODUCTION

- How This Book Is Organized
- Special Features

This book is designed to be like no other Windows Vista book you've seen. Some books try to cover every feature in Windows Vista, including often-rewarmed leftovers such as Paint and WordPad that haven't been exciting since—ever? Others are aimed at explaining basic features to technology newcomers. There's nothing wrong with books like these (and I've helped create a few of them as a contributing writer and technical reviewer). However, if you're an experienced Windows user, you're looking for something more. You're looking for a book that looks under Vista's hood, kicks the tires, and test drives the new and different features in Windows Vista.

In other words, *Maximum PC Guide to Microsoft Windows Vista Exposed* is a member of that all-too-rare class of technology books: a critical examination from a veteran technology enthusiast without an axe to grind. Like the magazine it's patterned after, this book is designed to tell the truth about Windows Vista. What features work? Which ones need work? Which features make your technology life easier? Which ones make it harder? You'll find out here.

Unlike many Windows Vista books, this one is based on actual production Windows Vista editions. That's important, because some Windows Vista features and installation methods were not known until retail product was available. This book uses the same Windows Vista that you can buy, so you know the issues, solutions, and workarounds discussed apply to your situation.

Whether you are already using Windows Vista, trying to decide whether to send in a Vista upgrade coupon, buying an upgrade version for your existing PC, or planning a computer purchase for yourself or your company, this book will help you choose the right Vista edition and get the most out of it.

How This Book Is Organized

This book contains 15 chapters, divided into four sections. Sure, you *can* read it cover to cover—and if you're still on the fence about Windows Vista (or if you want to stroke this author's ego), you should. But, if you're already using Windows Vista, make the most of this book by jumping directly into the sections that answer your most burning questions:

- What makes Windows Vista different? Better? And which Windows Vista edition is right for me? See Part I, "Introducing Windows Vista," for the answers.
- What's the best way to get started with Windows Vista? Discover how to install it, configure it, and use it to manage files, hardware, and contacts in Part II, "Getting to Work with Vista."
- What's new in media and gaming? What's happening with networking? It's time for Part III, "Windows Vista at Play: Entertainment, Internet, and Networking."
- How can I protect my Windows Vista system, safeguard the data it contains, and fix problems? Part IV, "Keeping Windows Vista Safe with Backup and Troubleshooting Tools," has the answers you need.

Special Features

If this book reminds you of a very large special edition of *Maximum PC*, the magazine, there's a good reason: It's designed to read like it! We've added lots of special features to make your reading enjoyable, useful, and on-task:

- Lots of figures, including annotated and overlapping figures, help you discover Windows Vista's most significant new features.
- Tips, Cautions, and Notes are sprinkled liberally throughout the text to help you find shortcuts, watch out for potential problems, and learn more about a particular topic.
- Sidebars provide focused discussions of topics that might not appeal to every reader, but provide extra information that may be essential to you.
- Feature ratings, using the venerable thumbs up/thumbs down method (hint: it's a lot older than that movie-rating TV show), help you discover what works—and what needs work.

Part I

Introducing Windows Vista

1 Welcome to Windows Vista 5

2 The Many Editions of Windows Vista 23

Chapter One

Welcome to Windows Vista

What's New and Improved in Windows Vista

IN THIS CHAPTER

- What's New and Improved in Windows Vista
- Getting the Features You Want in Vista

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From inside to outside, Windows Vista, the first all-new version of Windows since 2001, is full of brand-new features and improvements on familiar tools. Far from being a mere cosmetic makeover of Windows XP, Windows Vista has been reengineered from the ground up to provide a solid foundation for business, home, education, gaming, and multimedia users.

New and improved features and technologies fall into several categories:

GUI, Desktop, and User Interface

- 3D Aero GUI with DirectX 9 acceleration
- Vector-graphics-based GUI
- Live thumbnails of applications in TaskBar
- Windows Sidebar
- 3D application switching
- New menu system

Multimedia Applications

- Windows Media Player 11
- Windows Movie Maker 6
- Windows Photo Gallery
- Windows Media Center
- Windows DVD Maker
- Windows XPS print and document technology

Gaming Enhancements

- DirectX 10
- Games Explorer

Communications Applications

- Internet Explorer 7
- Windows Mail
- Windows Calendar
- Windows Collaboration
- Windows Contacts
- Windows Fax and Scan

File Management

- Instant Desktop Search
- Saved searches—virtual folders
- Easy access to file metadata
- Favorite Links

System Management

- Welcome Center
- Ease of Access Center
- Windows Easy Transfer
- Performance Diagnostic Console
- Memory Diagnostics
- Backup and Restore Center

Security and System Protection Features

- Enhanced security for x64 versions
- User Account Control (UAC)
- Comprehensive parental controls
- Windows Defender antispyware
- Enhanced firewall
- Phishing Filters in Windows Mail and IE 7
- IE 7 Protected Mode
- BitLocker Drive Encryption
- USB device control

As you can see from this list, Windows Vista has new features and new technologies at almost every turn. To find out which editions of Vista contain the goodies you want in your next operating system, be sure to check out Chapter 2, "The Many Editions of Windows Vista."

The following sections introduce you to what's new and improved in Windows Vista.

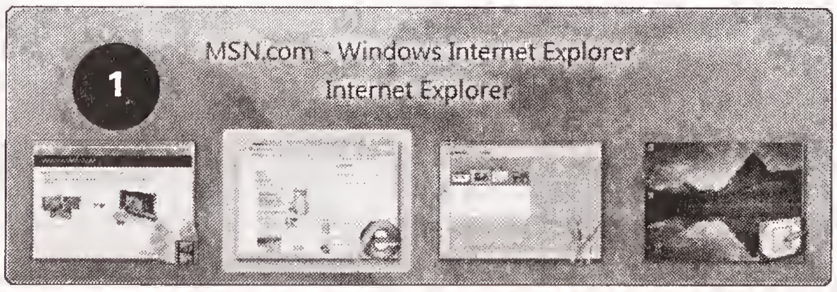
New GUI and Desktop Goodies in Windows Vista

From the first time you start Windows Vista, particularly if your system can use the DirectX 9-compatible 3D Aero GUI, Vista lives up to its name, offering a new way to interact with your desktop and applications.

Aero is the default GUI in most versions (except Vista Basic)—if your system supports DirectX 9 in hardware and uses native Vista display drivers. Its vector-based technology means that you can view your running applications as live thumbnails (see Figure 1.1) or in a slanted 3D stack (see Figure 1.2), dubbed *Flip 3D*. The translucent Aero (formerly known as Aero Glass) GUI helps you see windows behind windows and makes switching between applications easier than ever.

Windows Sidebar (refer to Figure 1.2) places useful gadgets on the side of your desktop, which is especially handy if you have a widescreen display. However, even if you have a traditional 4:3 ratio display like the one in Figure 1.2, Sidebar gadgets feature adjustable transparency levels, so they stay out of your way until you select one for use.

➪ For more information on configuring the Windows Vista GUI and Sidebar, see Chapter 4, "Mastering the Vista User Interface and Accessories."



1 Live thumbnails of minimized apps

Figure 1.1

Windows Vista's task switcher provides live thumbnails of each running program to help make selecting the right program easier.

① Windows Sidebar

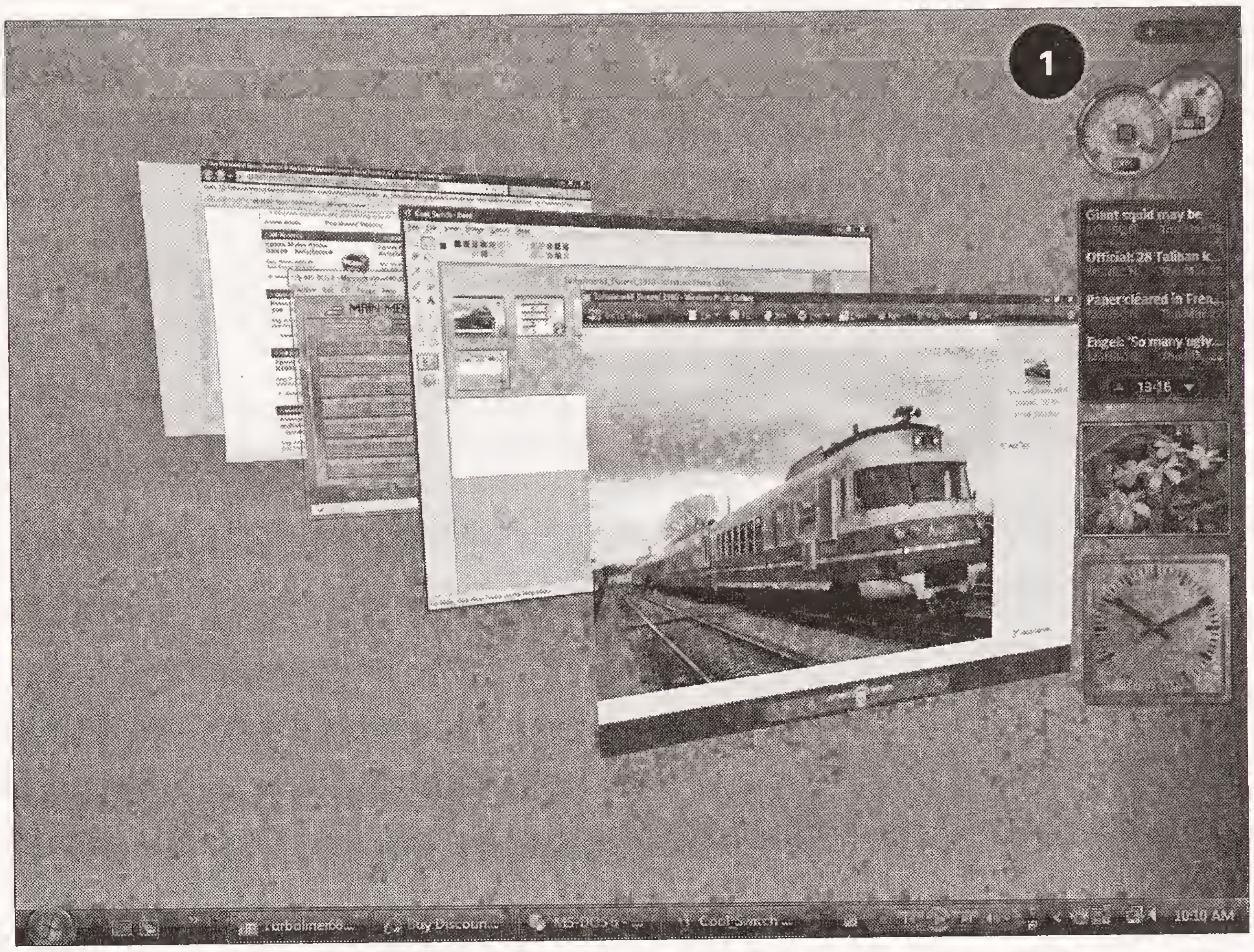


Figure 1.2

The Aero GUI supports translucent windows and Win-Tab task switching with a 3D view of each active program.

Better, Faster Menus

It doesn't matter how snazzy the user interface is if you can't find what you want. In a welcome change from the Start menus of Windows past, which gradually took over your desktop as you installed more programs, Windows Vista's Start menu is thinner and smarter. The left pane of the Start menu automatically displays the current menu tree, whereas the right pane provides links to Explorer windows of various types (see Figure 1.4). When you open a folder in the left pane, the folder opens in the same pane, instead of expanding across your screen like a mutant virus run amok.

The result? You find the programs you want faster and easier than ever before. If you're wondering what happened to the Run command, it's been banished to the Accessories menu (although you can bring it back out of exile with a bit of customization of the Start menu). However, you might want to leave Run cooling its heels and try the new Search feature instead. Type in the name of the program you want to run, and the Start menu highlights it (along with any other files that have matching text). Double-click the file you want to run, and away you go. Run or Search? Your choice, your computer!

➪ For more information on using the Windows Vista Start menu, see "The New and Improved Vista Start Menu," Chapter 4, p. 77.

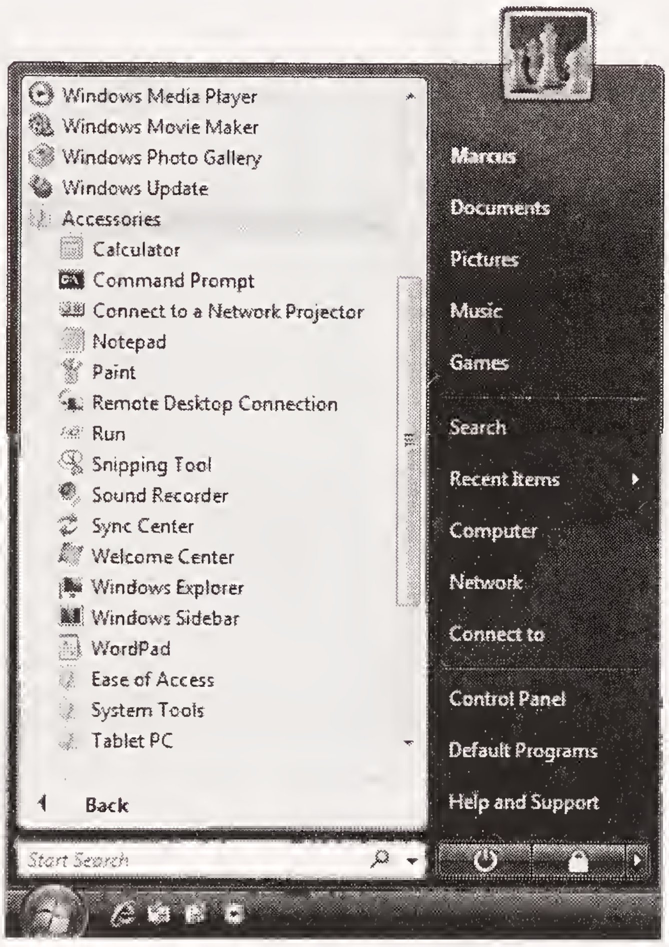

Windows Media Player
Windows Movie Maker
Windows Photo Gallery
Windows Update
Accessories
Calculator
Command Prompt
Connect to a Network Projector
Notepad
Paint
Remote Desktop Connection
Run
Snipping Tool
Sound Recorder
Sync Center
Welcome Center
Windows Explorer
Windows Sidebar
WordPad
Ease of Access
System Tools
Tablet PC
Back
Start Search
Marcus
Documents
Pictures
Music
Games
Search
Recent Items
Computer
Network
Connect to
Control Panel
Default Programs
Help and Support

Figure 1.3

As you move from menu to menu, Windows Vista's menu system switches views in the left pane to avoid taking over your desktop.

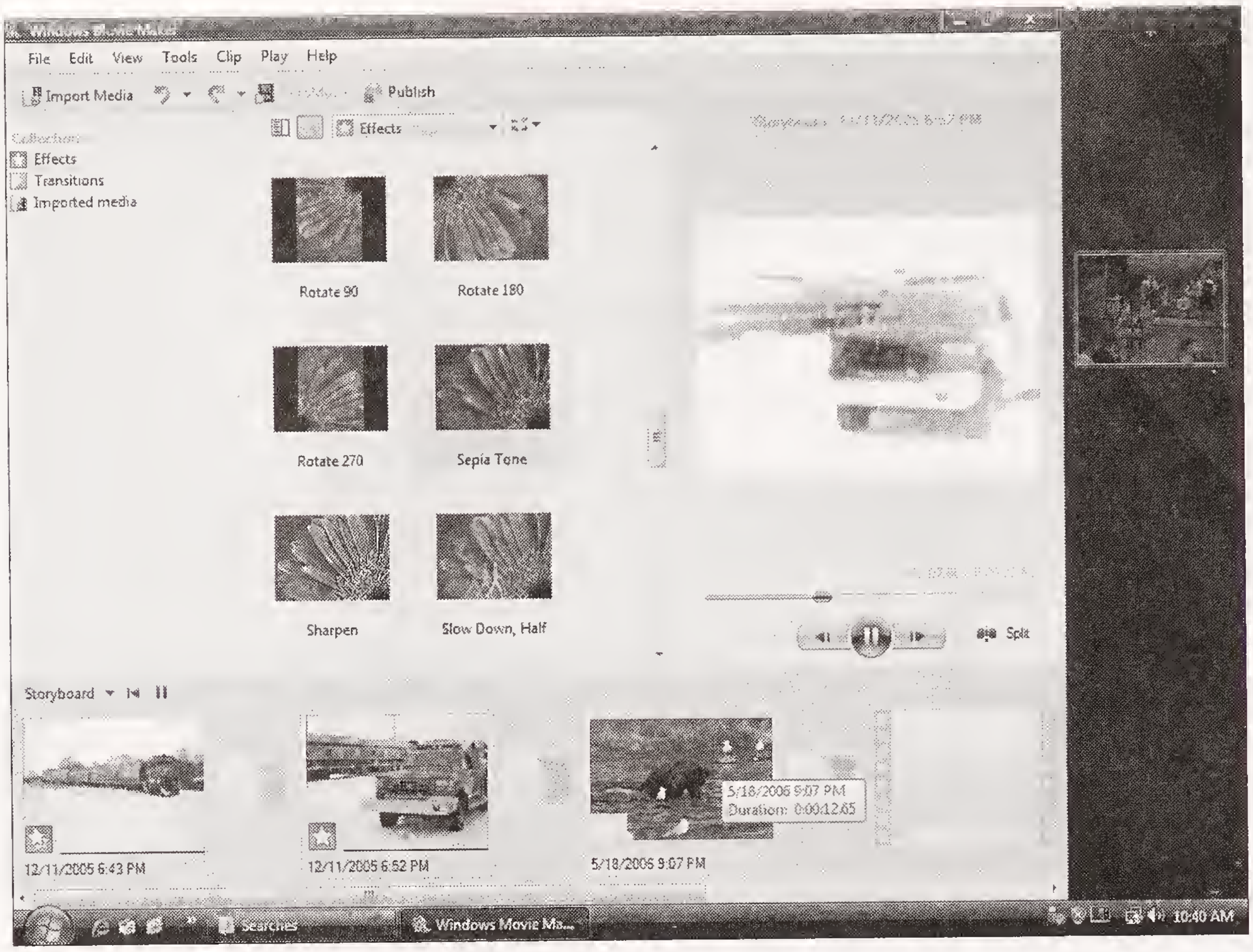
Vista's Multimedia Applications

Although Vista's new user interface makes a sharp break with the GUIs of the preceding ten years of Windows, Vista stays true to the Windows tradition in another way: It provides new, improved, and truly useful applications for multimedia.

Windows Media Player 11 is not your father's Media Player. It features a brand-new user interface, integrated DVD playback, and support for more types of media than ever before.

➪ For more information on using Windows Media Player 11, see Chapter 8, "Mastering Windows Media Player."

Windows Movie Maker 6 now features support for HDTV and a huge array of special effects (see Figure 1.4).


Windows Movie Maker
File Edit View Tools Clip Play Help
Import Media
Publish
Collections
Effects
Transitions
Imported media
Effects
Rotate 90
Rotate 180
Rotate 270
Sepia Tone
Sharpen
Slow Down, Half
Split
Storyboard
12/11/2005 6:43 PM
12/11/2005 6:52 PM
5/18/2006 9:07 PM
5/18/2006 9:07 PM
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Searches
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10:40 AM

Figure 1.4

Windows Movie Maker 6 provides a wide range of special effects, such as the Old Film effect being used for the picture clip at the top right.

Windows Movie Maker 6 gives you the ability to adjust brightness and add special effects to your video or photo footage and helps you make better movies without sacrificing ease of use.

For more information on using Windows Movie Maker 6, see "Using the New Windows Movie Maker," Chapter 9, p. 235.

The brand-new Photo Gallery combines photo editing (see Figure 1.5) with tag and caption editing, a print wizard, DVD and CD creation wizards, an email wizard, and a powerful slide show player with more than a dozen themes.

You'll still want a full-blown photo editor for complex editing jobs, but for quick touch-ups and easy organizing of your growing digital photo collection (including photos scanned from traditional sources), Photo Gallery is a great addition to Vista.

For more information on using Windows Photo Gallery, see "Using Windows Photo Gallery," Chapter 9, p. 239.

Some Vista editions include Media Center, which, like its Windows XP Media Center Edition ancestors, provides a full-screen home theater experience for music (see Figure 1.6), movies, TV recording and playback, and other media. Sit back, use your remote, and relax! You can minimize Media Center if work interrupts your listening or viewing enjoyment.

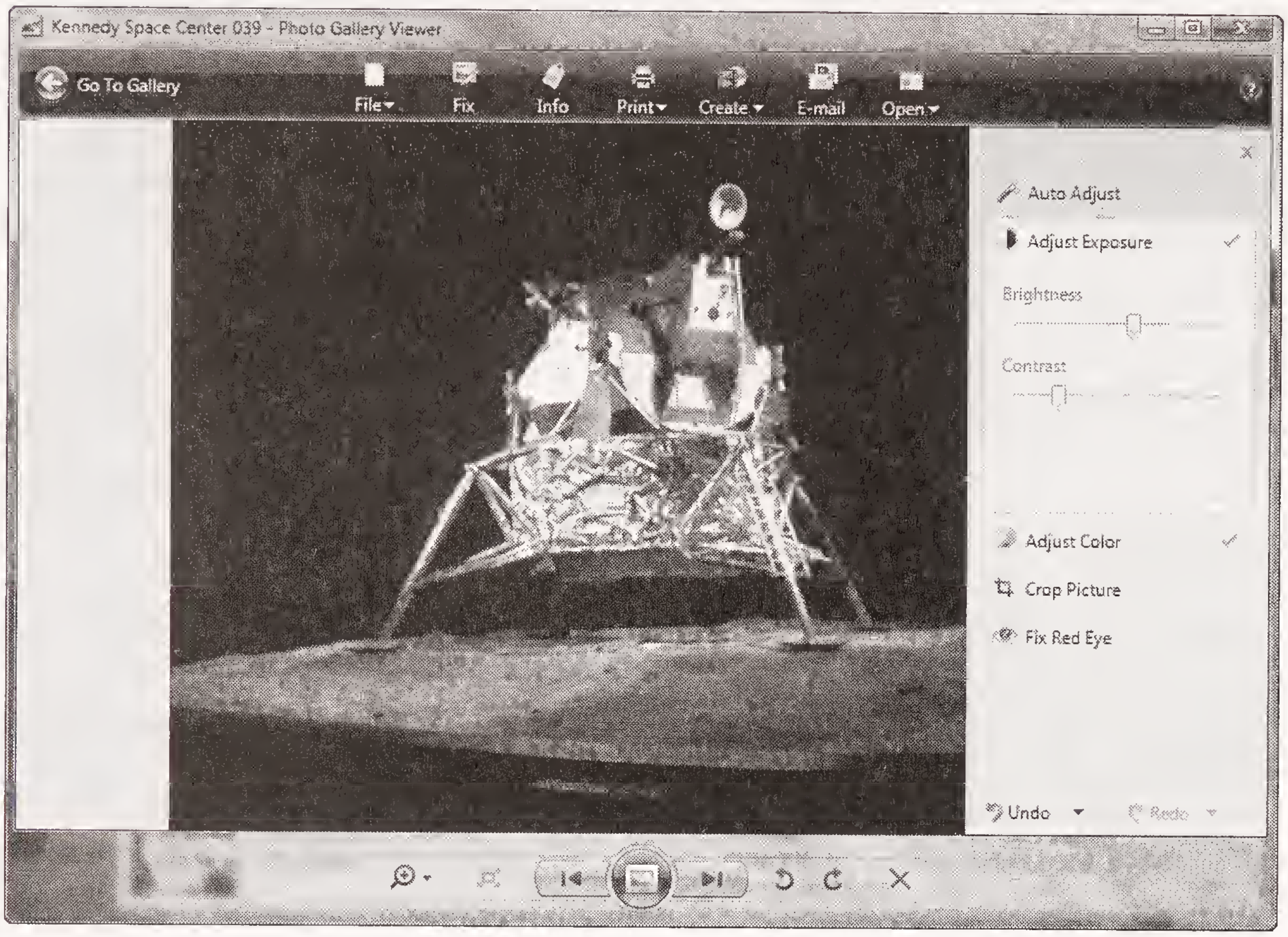

Kennedy Space Center 039 - Photo Gallery Viewer
Go To Gallery
File
Fix
Info
Print
Create
E-mail
Open
Auto Adjust
Adjust Exposure
Brightness
Contrast
Adjust Color
Crop Picture
Fix Red Eye
Undo
Redo

Figure 1.5

Photo Gallery Viewer provides quick photo editing and other imaging tools to Vista users.

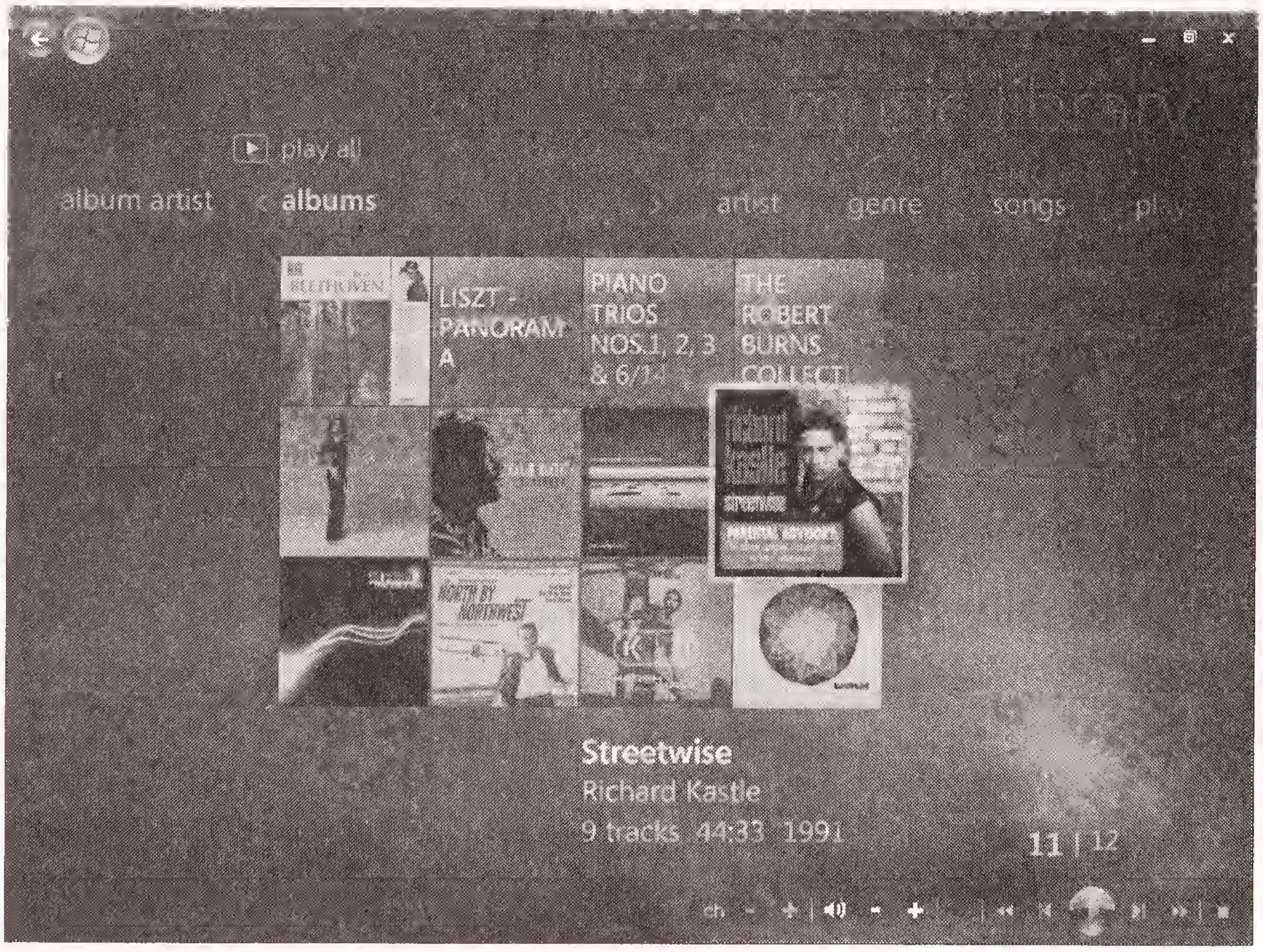

music library
play all
album artist
albums
artist
genre
songs
play
LISZT - PANORAMA
PIANO TRIOS NOS.1, 2, 3 & 6/14
THE ROBERT BURNS COLLECT
Streetwise
Richard Kastle
9 tracks 44:33 1991
11 | 12

Figure 1.6

Play your favorite media with Media Center.

For more information on Media Center, see Chapter 9, "Windows Media Center the Vista Way."

Although rewritable DVD drives have been a standard feature of most PCs for the last three years or so, Windows XP's feeble recording feature never recognized DVDs as recordable or rewritable media. Windows Vista includes full support for recordable and rewritable DVDs with both its standard data-writing feature and its new Windows DVD Maker.

Use DVD Maker when you want to create a DVD that can play on a standard set-top DVD player. You can also view a DVD Maker-based DVD in Windows Media Player 11 or other playback programs with support for DVD-Video playback.

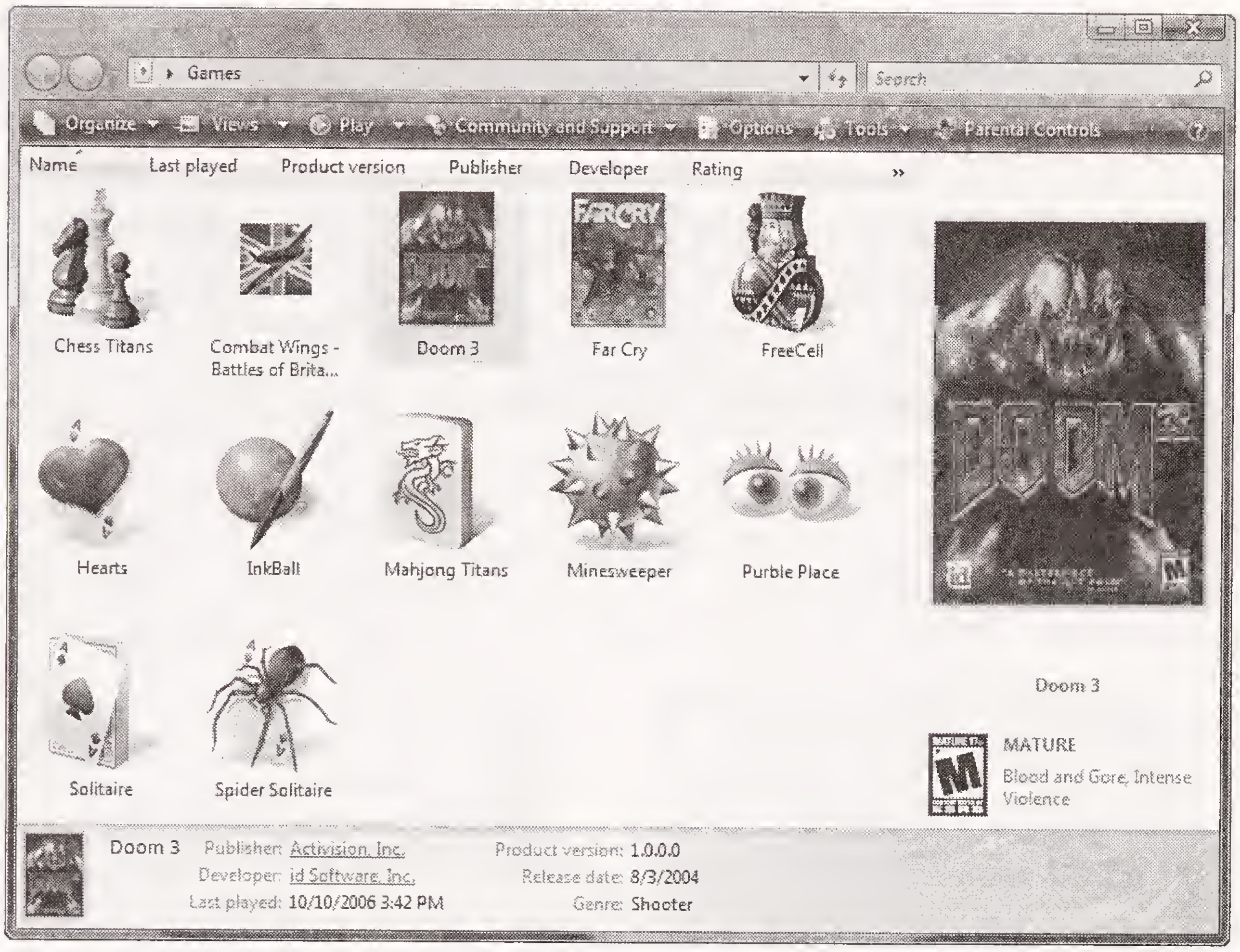
Finally, Adobe has long had a virtual monopoly on "digital paper" technologies with its PDF (Portable Document Format) file format, which can be created, edited, and viewed by Adobe and numerous third-party applications. However, PDF documents don't always print properly on some printers and can't always be viewed properly. Windows XPS (formerly codenamed "Metro") print and document technology in Vista is designed to create digital documents suitable for both viewing and printing.

XPS is short for *XML Paper Specification*, and both XML and XPS support are standard features in Microsoft Office 2007. Windows Vista includes the Microsoft XPS Document Writer as an installed printer. XPS documents can also be viewed in Internet Explorer 7.

Gaming Goodies in Vista

What a difference a decade makes! Whereas mid-1990s game developers largely avoided Windows 3.1 and only reluctantly embraced Windows 95, today's game developers use the latest versions of DirectX, making Windows *the* platform for PC game support. With the advent of Vista, Windows unveils a new user interface for game access, with support for new features under the hood.

The brand-new Games Explorer puts unprecedented gaming access and control at your fingertips. You can view game ratings (see Figure 1.7), check your system's performance, activate parental controls, and sort games by version.


Games
Search
Organize
Views
Play
Community and Support
Options
Tools
Parental Controls
Name
Last played
Product version
Publisher
Developer
Rating
Chess Titans
Combat Wings - Battles of Brita...
Doom 3
Far Cry
FreeCell
Hearts
InkBall
Mahjong Titans
Minesweeper
Purble Place
Solitaire
Spider Solitaire
Doom 3
MATURE
Blood and Gore, Intense Violence

Doom 3
Publisher: Activision, Inc.
Developer: id Software, Inc.
Last played: 10/10/2006 3:42 PM
Product version: 1.0.0.0
Release date: 8/3/2004
Genre: Shooter

Figure 1.7

The Vista Games Explorer.

Windows Vista is ready for the next generation of games with its incorporation of DirectX version 10 (a new version of DirectX exclusive to Vista). Instead of including older versions of DirectX as the current DirectX 9.0c and earlier versions have done, DirectX 10 permits DirectX 9.0 to run "side by side," enabling DirectX 10 to run faster than older versions. Of course, it's also necessary because DirectX 10 isn't directly compatible with previous version of DirectX. Note that DirectX 10 also includes Shader Model 4, which supports many more instruction slots, registers, texture samplers, and instructions than Shader Model 3 for more 3D digital goodness!

NOTE

If you need a specific reason to want DirectX 10 support from your PC hardware, look no further than the release of Halo 2 for the PC. If you don't have DirectX 10, you won't be playing this title.

For more information on how Vista making gaming better, see Chapter 10, "Gaming with Windows Vista."

Vista's Communications Applications

Windows Vista makes it even easier to stay in touch with friends, family, and co-workers via the Web, email, and fax with new and improved communications tools.

Internet Explorer 7 makes its debut as part of Windows Vista, bringing tabbed browsing, an integrated phishing filter, and additional security features for safer browsing to Vista users (see Figure 1.8).

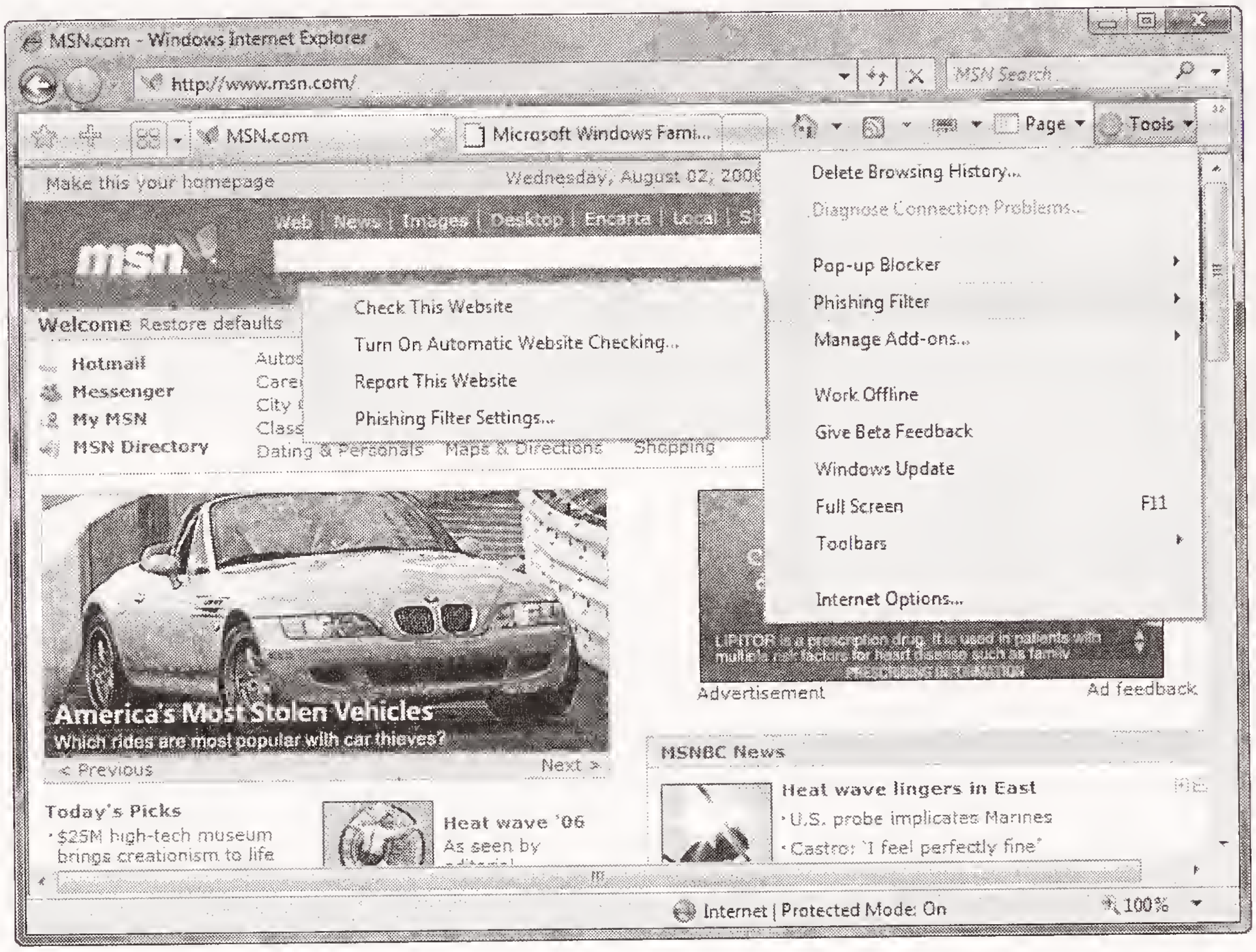

MSN.com - Windows Internet Explorer
http://www.msn.com/
MSN Search
MSN.com
Microsoft Windows Fami...
Page
Tools
Make this your homepage
Wednesday, August 02, 2006
Web | News | Images | Desktop | Encarta | Local
msn
Welcome Restore defaults
Hotmail
Messenger
My MSN
MSN Directory
Dating & Personals
Maps & Directions
Shopping
Check This Website
Turn On Automatic Website Checking...
Report This Website
Phishing Filter Settings...
Delete Browsing History...
Diagnose Connection Problems...
Pop-up Blocker
Phishing Filter
Manage Add-ons...
Work Offline
Give Beta Feedback
Windows Update
Full Screen F11
Toolbars
Internet Options...
America's Most Stolen Vehicles
Which rides are most popular with car thieves?
< Previous
Next »
Advertisement
Ad feedback
MSNBC News
Heat wave lingers in East
U.S. probe implicates Marines
Castro: 'I feel perfectly fine'
Today's Picks
$25M high-tech museum brings creationism to life
Heat wave '06
As seen by
Internet | Protected Mode: On
100%

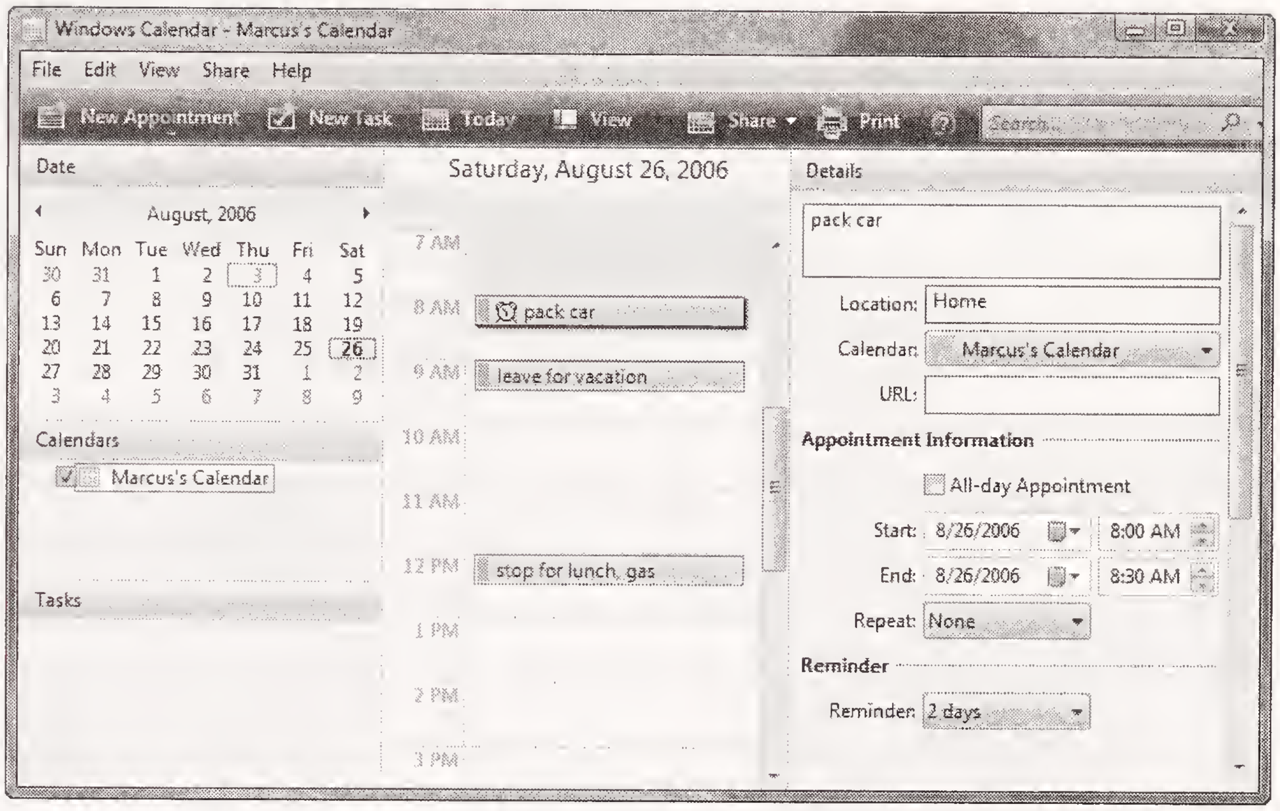
Figure 1.8

Internet Explorer features an integrated phishing filter to help stop web-based fraud.

For more information on what's new in Internet Explorer 7, see Chapter 11, "Internet the Windows Vista Way."

The much-unloved Outlook Express email client finally bows out in Vista. Its replacement, Windows Mail, doesn't break any new ground in its user interface, but it features enhanced message searching, better storage methods for your precious emails (no more corruption-prone databases!), and, most importantly, integrated junk mail and phishing protection to keep you safe from Nigerian 419 fraudsters and endless miracle medication ads.

Swiping a page from Apple's iCal, Microsoft finally adds integrated, web-enabled calendaring to some Vista editions with Windows Calendar. Windows Calendar (see Figure 1.9) enables you to overlay calendars from other workers or family members to help eliminate conflicts and find free time for meetings, lunches, or fun family times. It also supports the popular .iCalendar format.


Windows Calendar - Marcus's Calendar
File
Edit
View
Share
Help
New Appointment
New Task
Today
View
Share
Print
Search...
Date
August, 2006
Sun Mon Tue Wed Thu Fri Sat
Calendars
Marcus's Calendar
Tasks
Saturday, August 26, 2006
7 AM
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
Details
Appointment Information
Reminder

8 AM pack car
9 AM leave for vacation
12 PM stop for lunch, gas

pack car
Location: Home
Calendar: Marcus's Calendar
URL:
☐ All-day Appointment
Start: 8/26/2006 8:00 AM
End: 8/26/2006 8:30 AM
Repeat: None
Reminder: 2 days

Figure 1.9

Use Windows Calendar to plan family, business, and leisure time.

Some Vista versions include Windows Meeting Space. Windows Meeting Space enables you to have virtual meetings with co-workers or clients, no matter where they are located or how high the price for an airline ticket or a gallon of unleaded gasoline. You can share presentations and handouts with participants you invite via email or IM.

The new Windows Contacts Explorer makes it easy to keep track of family, friends, co-workers, and clients. Windows Contacts integrates with Windows Mail and telephone systems, and enables you to share folders with any contacts you choose.

If your fax-enabled dialup modem has been gathering dust inside your PC or on a shelf since you upgraded to broadband, Windows Fax and Scan (included in some versions of Vista) gives you a reason to connect it and use it again.

Windows Fax and Scan uses an Explorer-style interface to make sending and receiving faxes easier, whether you use a fax modem or a network with a fax server.

⇨ For more information on Windows Mail, Windows Calendar, Windows Collaboration, Windows Contacts, and Windows Fax and Scan, see Chapter 7, “Managing Your Contacts with Vista.”

Supercharged File Management in Vista

Instead of opening My Documents and navigating through a tangle of folders to find pictures, music, and other goodies, Windows Vista adds specialized Explorer windows to the Start menu that provide the specific features you need to enjoy different types of media. For example, the Pictures folder features Slide Show, Share, Burn, and Previous Versions buttons, whereas the Music folder replaces the Slide Show button with a Play All button. When you view folders in any Explorer window, you can see at a glance which folders are empty, which ones contain files, and which ones contain more files than others.

Finding the file you want is easier than ever before. Thanks to Vista's real-time file indexing feature, you can search for, and find, all types of files in mere seconds. Instant Desktop Search is available from the Start button as well as from all Explorer windows. Type in text, and in seconds, matching files appear. Even other Windows apps, such as Windows Media Player 11, get in on the act, allowing you to use Instant Desktop Search to quickly locate the file you want to play or open.

Metadata—the nitty-gritty details of digital camera settings, file formats, image resolution, digital music track length, and so on that is stored with various types of data files—has never been so easy to view as in Windows Vista. Select any file in any Explorer window, and basic metadata information is displayed at the bottom of the window. Click Edit, and the Details tab of the properties sheet for the file displays additional information (see Figure 1.10).

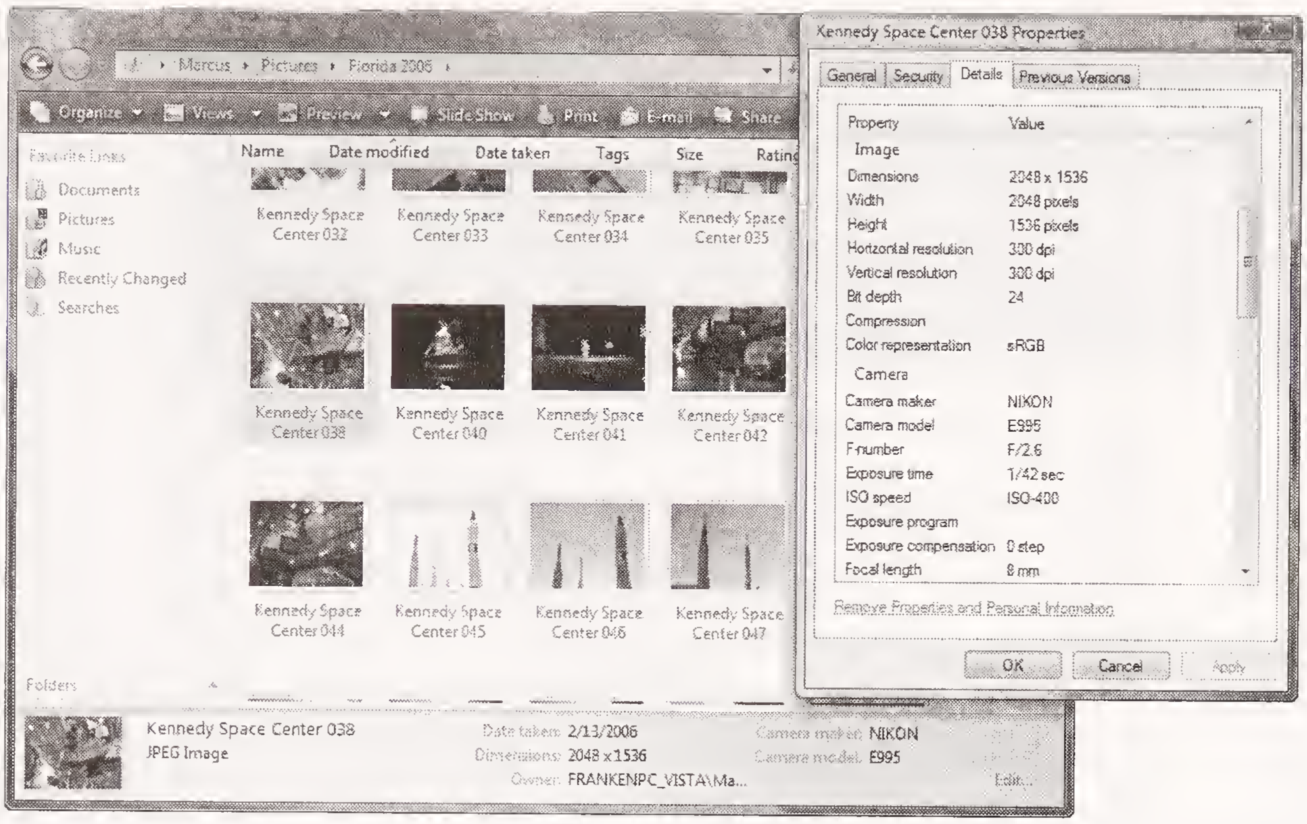
As with any version of Windows, Windows Vista lets you store your data files anywhere. However, Vista gives you an additional reason to be conscientious about your folder choices. In addition to the dedicated Explorer links on the right side of the Start menu, each Explorer window features a left pane with Favorite Links to the current user's Documents, Pictures, and Music folders (refer to Figure 1.10). To quickly find a file you (or Windows Vista) just changed, open the Recently Changed virtual folder. To find saved searches (virtual folders), click Searches.

⇨ For more information on file management with Windows Vista, see Chapter 5, "Vista Tools for Faster and Better File Organization."

TIP

It can be frustrating trying to find digital photos or other types of files in multiple folders. If you categorize your pictures by event, for example, pictures of Aunt Millie might be scattered across a dozen folders ("Uncle Joe's Funeral," "Aunt Millie's 60th Birthday Party," "Dad's 50th Birthday," and so on). Windows Vista's Virtual Folders feature makes it easy to organize files logically as well as physically.

Use Instant Desktop Search to look for files by name, tags (created with Photo Gallery or other Windows applications), or metadata. To find the same files again, save the search to create a virtual folder. When you open a saved search, you can group the files by physical location to help you find the files you need for your project.


Marcus ▸ Pictures ▸ Florida 2006 ▸
Organize
Views
Preview
Slide Show
Print
E-mail
Share
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Folders
Name
Date modified
Date taken
Tags
Size
Rating
Kennedy Space Center 032
Kennedy Space Center 033
Kennedy Space Center 034
Kennedy Space Center 035
Kennedy Space Center 038
Kennedy Space Center 040
Kennedy Space Center 041
Kennedy Space Center 042
Kennedy Space Center 044
Kennedy Space Center 045
Kennedy Space Center 046
Kennedy Space Center 047
Kennedy Space Center 038 Properties
General
Security
Details
Previous Versions
Remove Properties and Personal Information
OK
Cancel
Apply
Edit...

Property	Value
Image	
Dimensions	2048 x 1536
Width	2048 pixels
Height	1536 pixels
Horizontal resolution	300 dpi
Vertical resolution	300 dpi
Bit depth	24
Compression	
Color representation	sRGB
Camera	
Camera maker	NIKON
Camera model	E995
F-number	F/2.6
Exposure time	1/42 sec
ISO speed	ISO-400
Exposure program	
Exposure compensation	0 step
Focal length	8 mm

Kennedy Space Center 038
JPEG Image
Date taken: 2/13/2006
Dimensions: 2048 x 1536
Owner: FRANKENPC_VISTA\Ma...
Camera maker: NIKON
Camera model: E995

Figure 1.10

Viewing the camera settings and exposure metadata for a digital photo. Note how the main Pictures Explorer window provides basic information.

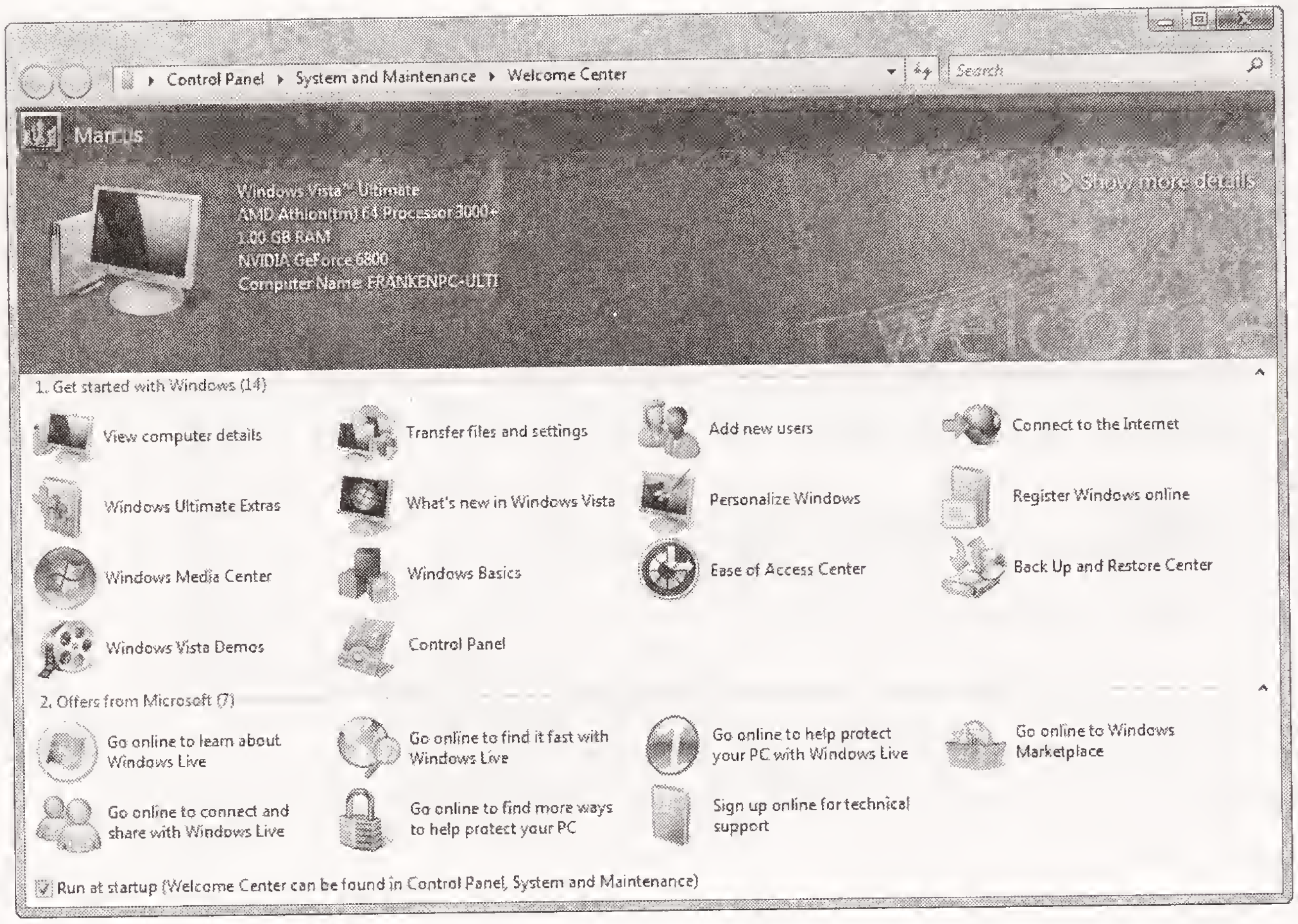
System Management

System management has never been as enjoyable as gaming, or even fiddling with your favorite data files. However, Windows Vista makes system management easier with a number of brand-new and improved management tools for system configuration, alternatives to the mouse and keyboard, migration, diagnostics, backup, and more.

The Welcome Center, like its Interstate Highway counterpart, provides a friendly and useful introduction to your destination. Use it to get a quick take on your system's configuration or to complete Windows setup. It shows up when you start Windows Vista for the first time (see Figure 1.11), and you can bring it back via the Control Panel whenever you need quick access to device setup, Windows Easy Transfer, or other configuration features.

For years, Windows has been primarily mouse driven, but Windows Vista provides alternatives. Open the Ease of Access Center in the Control Panel to enable a wide variety of tools, from onscreen keyboard to speech recognition.

➪ For more information on Ease of Access options, see "Configuring Ease of Access Options," Chapter 4, p. 91.


Control Panel ▸ System and Maintenance ▸ Welcome Center
Search
Marcus
Show more details
1. Get started with Windows (14)
View computer details
Transfer files and settings
Add new users
Connect to the Internet
Windows Ultimate Extras
What's new in Windows Vista
Personalize Windows
Register Windows online
Windows Media Center
Windows Basics
Ease of Access Center
Back Up and Restore Center
Windows Vista Demos
Control Panel
2. Offers from Microsoft (7)
Go online to learn about Windows Live
Go online to find it fast with Windows Live
Go online to help protect your PC with Windows Live
Go online to Windows Marketplace
Go online to connect and share with Windows Live
Go online to find more ways to help protect your PC
Sign up online for technical support

Windows Vista™ Ultimate
AMD Athlon(tm) 64 Processor 3000+
1.00 GB RAM
NVIDIA GeForce 6800
Computer Name: FRANKENPC-ULTI

☑ Run at startup (Welcome Center can be found in Control Panel, System and Maintenance)

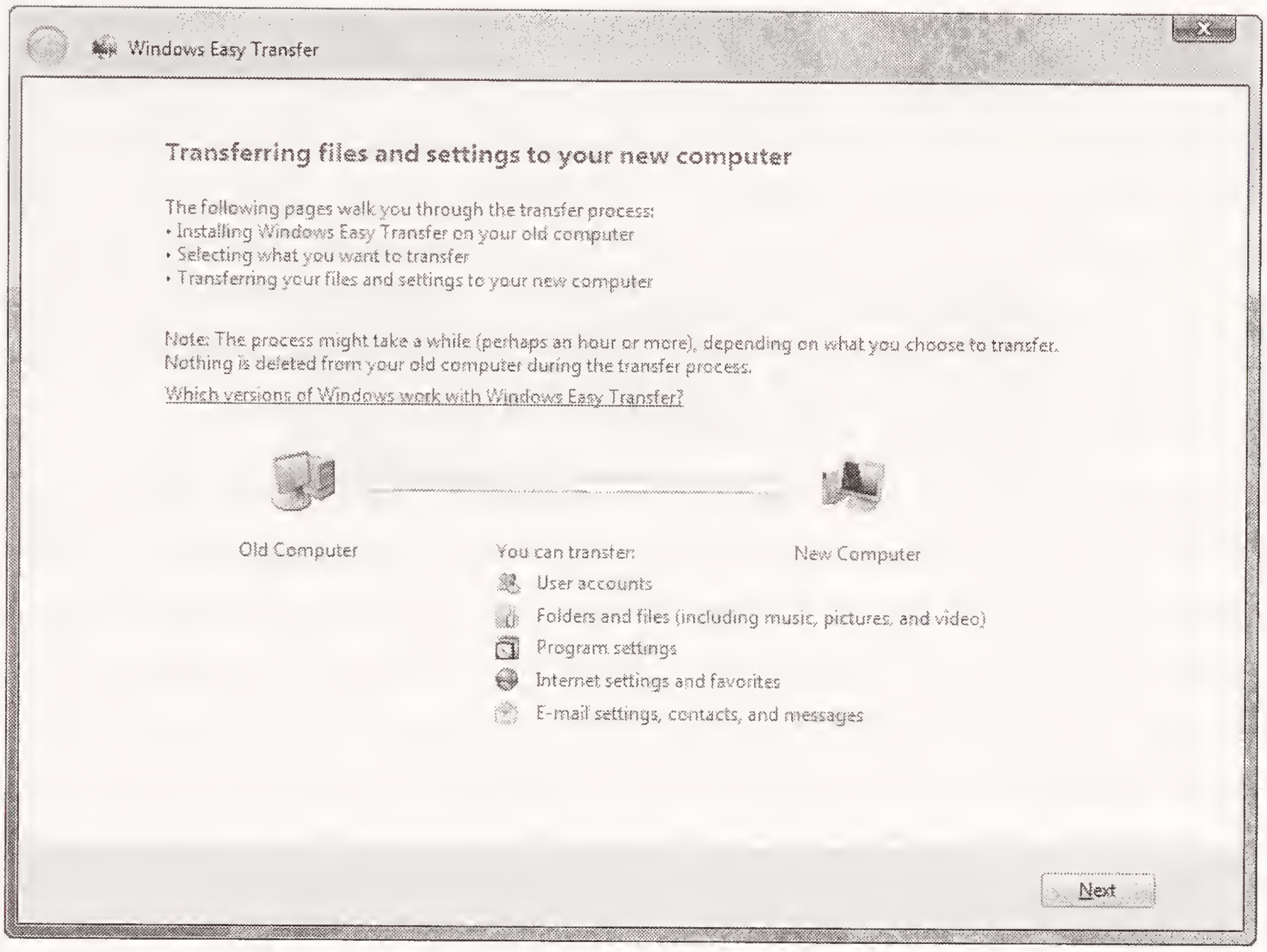
Figure 1.11

The Windows Vista Welcome Center provides a roadmap to Vista's system configuration features.

If you're "moving on up" from Windows 2000 or Windows XP, use Windows Easy Transfer (see Figure 1.12) to make the move easy. This replacement for the Windows XP Files and Settings Transfer Wizard moves user accounts, data folders and files, program settings, Internet settings and favorites, and email (settings, contacts, and messages). It supports a wide variety of connections and transfer methods, including options to pull information from your existing system before performing a clean install of Windows Vista.

⇨ For more information on Easy Transfer, see "Transferring Settings with Windows Easy Transfer," Chapter 3, p. 61.

Windows Vista includes a number of enhancements to its management console. One of the most useful for performance-minded users is the Performance Diagnostic Console. The Performance Diagnostic Console provides real-time information on CPU, disk, network, and memory usage along with reporting options. Use it to find bottlenecks in system performance.



Transferring files and settings to your new computer

The following pages walk you through the transfer process:
- Installing Windows Easy Transfer on your old computer
- Selecting what you want to transfer
- Transferring your files and settings to your new computer

Note: The process might take a while (perhaps an hour or more), depending on what you choose to transfer. Nothing is deleted from your old computer during the transfer process.

Which versions of Windows work with Windows Easy Transfer?

You can transfer:
- User accounts
- Folders and files (including music, pictures, and video)
- Program settings
- Internet settings and favorites
- E-mail settings, contacts, and messages

Figure 1.12

The Windows Easy Transfer program helps you migrate from Windows 2000 or Windows XP to Windows Vista.

RAM makes Windows work, and bad RAM makes Windows fail. To help you track down memory-related problems, Windows Vista includes a memory diagnostic program that runs before the Windows GUI starts. Memory Diagnostics provides a status message, and if any problems are found, it generates a report after you log on to Windows.

⇨ For more information on the Memory Diagnostics Tool, see "Using Memory Diagnostics," Chapter 15, p. 364.

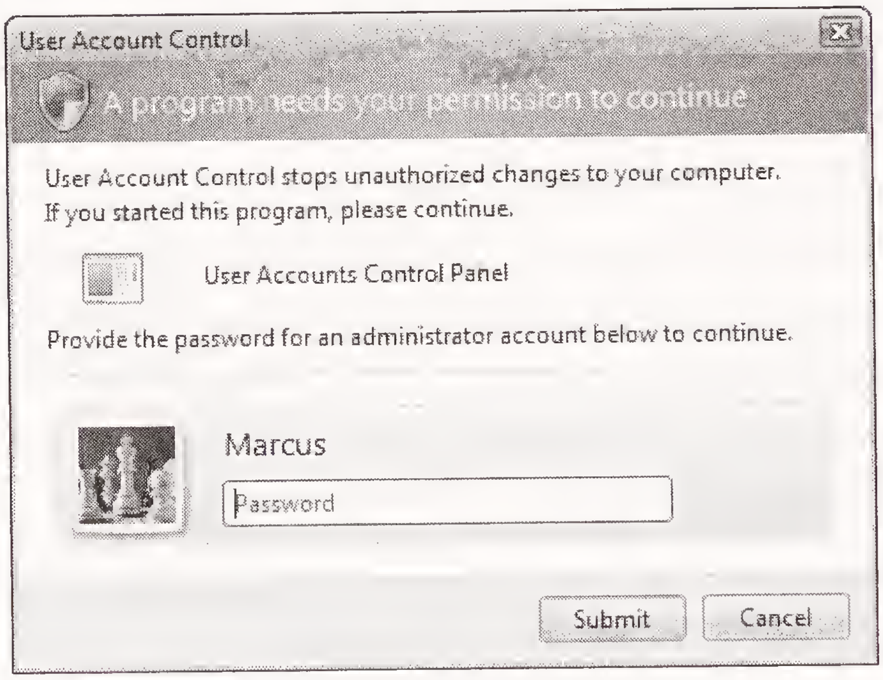
Finally, all versions of Windows Vista include backup and restore tools that, finally, support rewritable DVDs as well as external hard disks. All versions include the File and Folder Backup for backing up data, and some versions also include the new CompletePC Backup disaster recovery image backup program. Vista also supports the creation and restoration of shadow copies, which are previous versions of a file that has been modified or deleted.

⇨ For more information on backup and restore, see "Windows Backup and Restore Center," Chapter 13, p. 319.

Security Is Job 1 in Windows Vista

Previous versions of Microsoft Windows have been some of the biggest (and juiciest) security targets around. Windows Vista aims to change Windows' reputation of being easy to attack. Some of the changes, such as Windows Service Hardening and enhanced security for x64 versions of Vista, aren't visible to users, but there are plenty of visible clues that Windows Vista is a tougher nut to crack than Windows XP.

Windows Vista enables you to set up all users as Standard Users with adequate rights to run software and configure their own desktops. However, when a standard user tries to make a change that could impact security, such as fiddling with user accounts or trying to install hardware, the User Account Control (UAC) dialog appears (see Figure 1.13), forcing the user to provide administrator-level credentials to proceed. No administrator password? No changes permitted! To determine which menu items are protected by UAC, look for the Windows security shield icon.



User Account Control stops unauthorized changes to your computer.
If you started this program, please continue.

User Accounts Control Panel

Provide the password for an administrator account below to continue.

Marcus

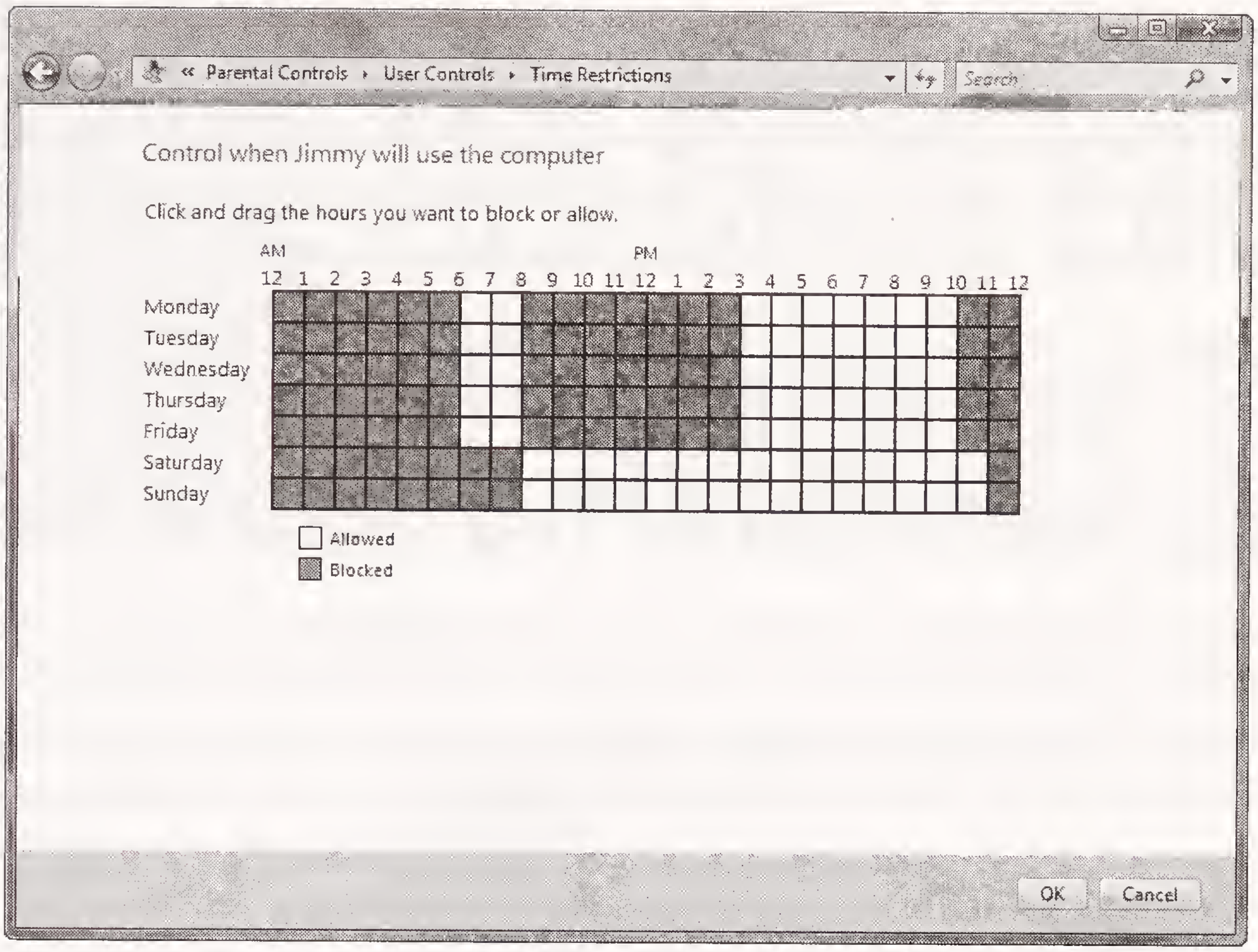
Password

Figure 1.13

User Account Control (UAC) stops unauthorized changes to critical features of Windows Vista.

For parents, Windows Vista finally provides a truly effective parental control system. Use it to keep an eye on what the kids are doing online, block computer access at night or when you're at work (see Figure 1.14), prevent your ten-year-old from playing adults-only games, and block access to undesirable websites.

In addition to its new phishing filter, IE 7 now runs in protected mode by default. Protected mode enables standard users to install software needed to access some websites but blocks full access by that software to your system.



Control when Jimmy will use the computer

Click and drag the hours you want to block or allow.

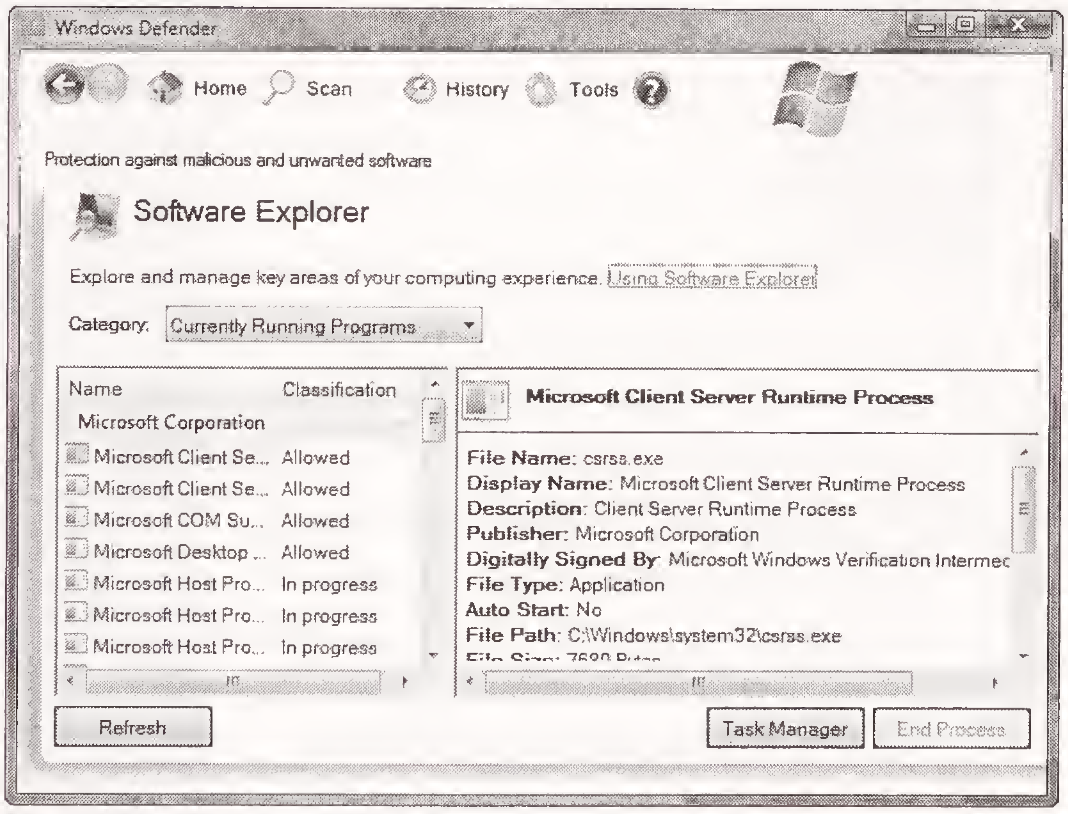
	AM												PM											
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Monday	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨
Tuesday	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨
Wednesday	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨
Thursday	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨
Friday	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨
Saturday	▨	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	▨
Sunday	▨	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	▨

☐ Allowed
▨ Blocked

Figure 1.14

Parental controls can put an end to unauthorized after-hours computer use.

Although Windows Defender was introduced as a downloadable add-on for Windows XP users, it's now a standard part of Windows Vista. The new Software Explorer feature (see Figure 1.15) provides boatloads of information about each program running on your system, while providing one-click access to Task Manager.



Protection against malicious and unwanted software

Software Explorer

Explore and manage key areas of your computing experience. Using Software Explorer

Category: Currently Running Programs

Name	Classification
Microsoft Corporation	
Microsoft Client Se...	Allowed
Microsoft Client Se...	Allowed
Microsoft COM Su...	Allowed
Microsoft Desktop ...	Allowed
Microsoft Host Pro...	In progress
Microsoft Host Pro...	In progress
Microsoft Host Pro...	In progress

Microsoft Client Server Runtime Process

File Name: csrss.exe
Display Name: Microsoft Client Server Runtime Process
Description: Client Server Runtime Process
Publisher: Microsoft Corporation
Digitally Signed By: Microsoft Windows Verification Intermec
File Type: Application
Auto Start: No
File Path: C:\Windows\system32\csrss.exe

Figure 1.15

Software Explorer gives you details about every program running on your system.

For corporate users, especially those who use laptop computers, BitLocker drive encryption in some versions of Vista provides strong integrated disk encryption. A lost computer no longer means that sensitive data will be exposed. And, USB device control implemented through Group Policy Editor can prevent "thumbdrive theft" of sensitive data.

➪ For more information on Windows Vista security features, see Chapter 14, "Protecting Windows Vista."

Getting the Features You Want in Vista

In numerous places in this chapter, I've mentioned that "some versions" of Vista include a particular feature. Because Vista is offered in four different retail editions in the United States, additional Enterprise versions available to volume customers, and in additional editions in other parts of the world, it's important to make sure you get the version of Vista that meets your needs—and budget. To learn more about Vista versions and the features they support, join me in Chapter 2, "The Many Editions of Windows Vista."

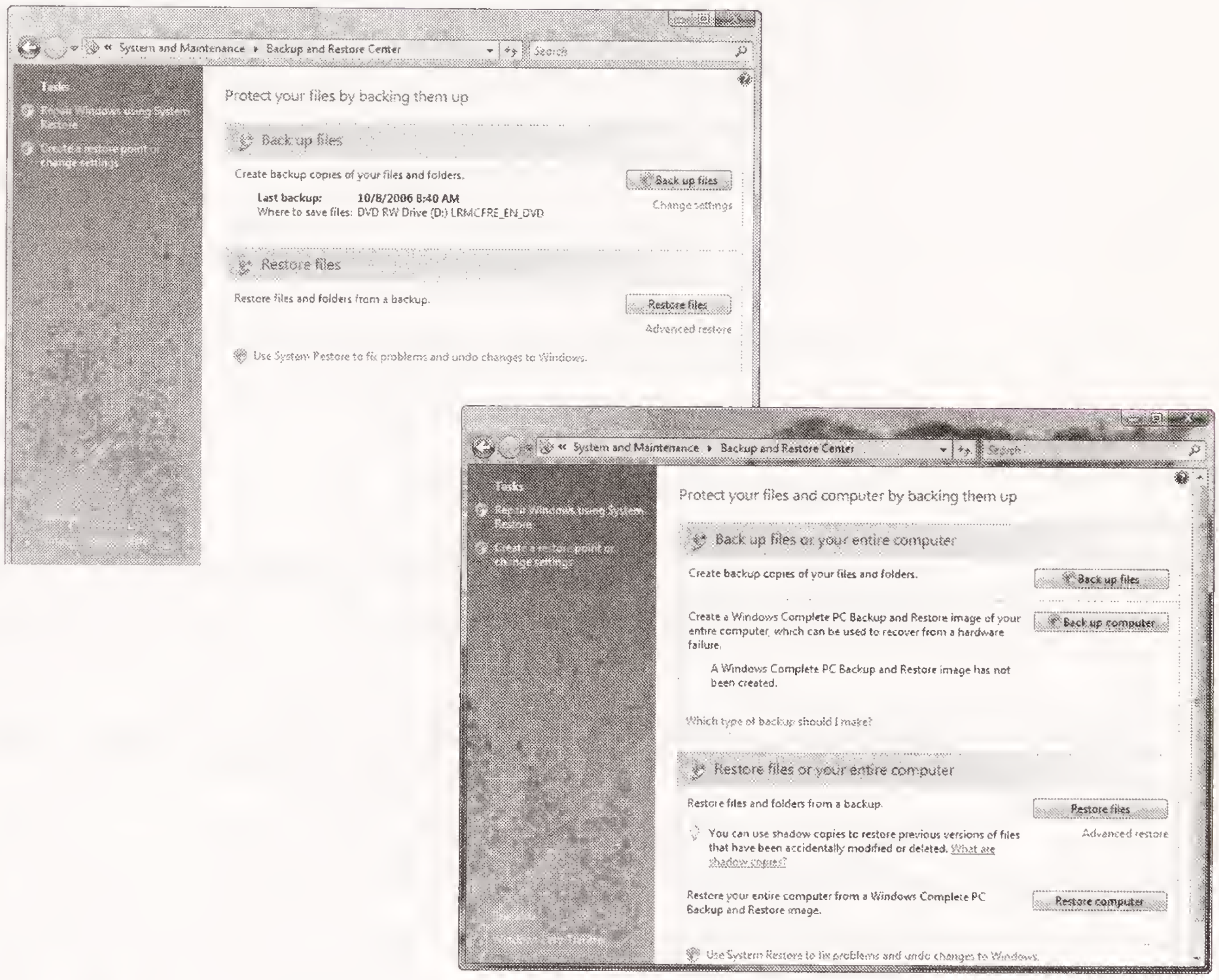
Chapter Two

The Many Editions of Windows Vista

IN THIS CHAPTER

- What Version of Vista Is Right for Me?
- Supported Upgrade Paths

What Version of Vista Is Right for Me?


« System and Maintenance ▸ Backup and Restore Center
Search
Tasks
Repair Windows using System Restore
Create a restore point or change settings
Back up files
Change settings
Restore files
Advanced restore

Protect your files by backing them up

Back up files

Create backup copies of your files and folders.

Last backup: 10/8/2006 8:40 AM
Where to save files: DVD RW Drive (D:) LRMCFRE_EN_DVD

Restore files

Restore files and folders from a backup.

Use System Restore to fix problems and undo changes to Windows.

« System and Maintenance ▸ Backup and Restore Center
Search
Tasks
Repair Windows using System Restore
Create a restore point or change settings
Back up files
Back up computer
Restore files
Advanced restore
Restore computer

Protect your files and computer by backing them up

Back up files or your entire computer

Create backup copies of your files and folders.

Create a Windows Complete PC Backup and Restore image of your entire computer, which can be used to recover from a hardware failure.

A Windows Complete PC Backup and Restore image has not been created.

Which type of backup should I make?

Restore files or your entire computer

Restore files and folders from a backup.

You can use shadow copies to restore previous versions of files that have been accidentally modified or deleted. What are shadow copies?

Restore your entire computer from a Windows Complete PC Backup and Restore image.

Use System Restore to fix problems and undo changes to Windows.

Windows Vista isn't a single operating system, but rather a family of operating systems with common roots but differing features. Cooking up a collection that's the "same thing, only different" isn't exactly a new approach for Mama Microsoft:

- Windows NT, Windows NT Server
- Windows 2000 Professional, Windows 2000 Server
- Windows XP Home Edition, Windows XP Professional, Windows XP Media Center Edition(s), Windows XP Professional Tablet Edition, Windows XP Professional x64 Edition

The different editions of Windows XP were designed primarily with different types of hardware in mind. For example, Windows XP Professional x64 Edition ran only on x64 processors, while Windows XP Professional Tablet Edition featured handwriting support, and Windows XP Media Center Edition was intended to be the hub for home entertainment systems.

Windows Vista differs in several ways from this hardware-centric design. As you'll see in this chapter, a single Vista edition can work with home theater hardware, provide handwriting support, and run in your choice of x86 (32-bit) or x64 (64-bit) modes. This task-oriented, rather than hardware-oriented, design makes it easier for you to choose the right Windows Vista edition for your needs, while providing you with options to extend its capabilities even further.

Microsoft offers five different Windows Vista editions:

- Windows Vista Home Basic
- Windows Vista Home Premium
- Windows Vista Business
- Windows Vista Enterprise
- Windows Vista Ultimate

All except Windows Vista Enterprise will be available at retail stores. Which version is best for you? For your office? For your kids? Let's find out.

Which Vista Edition Has Your Favorite Features?

Chapter 1, "Welcome to Windows Vista," introduced you to Vista's new and improved features. Some of these features are "core" features found in every Vista edition, whereas others show up in some versions but are absent from others. If you're not sure which Vista edition to choose, looking for the Vista edition that has the features you want is a good way to make the choice.

Core Windows Vista features found in all U.S. editions can be divided into several categories. They include

User Interface

- Vista Basic user interface
- Windows Sidebar

Applications and Utilities

- Windows Mail
- Windows Calendar
- Windows Media Player 11
- Sync Center
- Speech recognition
- Accessibility (Ease of Access) Center
- Internet Explorer 7.0
- Windows Welcome Center
- Remote desktop client
- Windows Easy Transfer
- SafeDocs Document Backup

Security Features

- User Account Control
- Windows Security Center
- Windows Defender
- Windows Firewall
- IE7 Protected Mode and Fix My Settings
- Anti-Phishing (IE 7, Windows Mail)
- Service Hardening

Networking

- Improved file and folder sharing
- Network Center
- Network diagnostics and troubleshooting
- Improved wireless networking
- Improved peer networking
- Improved VPN support
- Next-generation TCP/IP stack
- Support for IPv6 and IPv4

Performance

- Improved power management
- Windows Hot Start
- Performance self-tuning
- Windows ReadyDrive
- Windows Display Driver Model (WDDM)
- Fast startup and shutdown
- Sleep mode
- 32-bit and x64 processor support
- WinFX support
- Windows SuperFetch
- Windows ReadyBoost
- Low Priority I/O

File Management

- Windows Photo Gallery
- Games Explorer
- XPS Document Support
- Instant Search
- Automatic file organization based on file tags and properties

Troubleshooting and Diagnostics

- Automatic HD defrag
- Windows Update
- Hardware diagnostics

TIP

If you have trouble deciding which Vista edition you want, go for Vista Ultimate, which includes every Vista feature.

Note that this list doesn't include some of the coolest Vista features, such as the Aero GUI, Flip and Flip 3D task switching, image backup, BitLocker drive encryption, parental controls, Media Center, and others. Different editions of Vista provide different combinations of features.

To help you decide which Vista version is right for you, check out Table 2.1, which lists noncore Vista features and the U.S. Vista editions that contain particular features.

Table 2.1 Vista Features by U.S. Editions

Category	Feature	Editions Supporting This Feature	Notes
User interface	Aero	Home Premium Business Enterprise Ultimate	Includes Glass, Flip and Flip 3D task switching, live TaskBar thumbnails, dynamic windows
	Simultaneous installation of multiple languages for user interface	Enterprise Ultimate	36 languages total
Applications and utilities	Photo Gallery themed slide shows	Home Premium Ultimate	
	Media Center	Home Premium Ultimate	Includes support for standard TV and HDTV; CableCard; Media Center Extenders
	Windows Movie Maker	Home Basic Home Premium* Ultimate*	*Also includes HD support
	Windows DVD Maker	Home Premium Ultimate	
	Premium Games	Home Premium Business* Enterprise* Ultimate	*Optional
	Small business resources	Business Ultimate	
	Fax & Scan	Business Enterprise* Ultimate*	*Optional

Category	Feature	Editions Supporting This Feature	Notes
	Scheduled backup	Home Premium Business Enterprise Ultimate	
	Network backup	Home Premium Business Enterprise Ultimate	
	Image backup and disaster recovery	Business Enterprise Ultimate	
	Windows Shadow Copy	Business Enterprise Ultimate	
	Encrypting File System (EFS)	Business Enterprise Ultimate	
	BitLocker Drive Encryption	Enterprise Ultimate	
	Subsystem for UNIX-based applications	Enterprise Ultimate	
Networking	Wireless network provisioning	Business Enterprise Ultimate	
	Network projection	Home Premium Business Enterprise Ultimate	
	Remote desktop client and host	Business Enterprise Ultimate	
	Windows Server and Small Business Server domain support	Business Enterprise Ultimate	
	Group policy support	Business Enterprise Ultimate	

continues

Table 2.1 Vista Features by U.S. Editions (continued)

Category	Feature	Editions Supporting This Feature	Notes
	Offline files and folders	Business Enterprise Ultimate	
	Client-side caching	Business Enterprise Ultimate	
	Roaming user profiles	Business Enterprise Ultimate	
	Folder redirection	Business Enterprise Ultimate	
	Internet Information Server	Business* Enterprise* Ultimate*	*Optional
	Policy-based quality of service for networks	Business Enterprise Ultimate	
	Network Access Protection Client Agent	Business Enterprise Ultimate	
	Pluggable logon authentication architecture	Business Enterprise Ultimate	
System management	Centralized power management via Group Policy	Business Enterprise Ultimate	
	Windows Rights Management Service (RMS) client	Business Enterprise Ultimate	
	Desktop deployment tools for managed networks	Business Enterprise Ultimate	
	Integrated Smart Card management	Business Enterprise Ultimate	

Category	Feature	Editions Supporting This Feature	Notes
	Control of device driver installation	Business Enterprise Ultimate	
	Virtual PC Express	Enterprise Ultimate	
Edition Upgrades	Windows Anytime Upgrade	Home Basic Home Premium Business	
	Windows Ultimate Extras	Ultimate	

As you can see from Table 2.1, more of the features you'll want for gaming and multimedia can be found in the Home Premium and Ultimate editions, whereas business users will prefer the Business, Enterprise, and Ultimate editions. However, there are a couple of other considerations to take into account before you select the best edition for your needs:

- How much RAM do you have?
- How many processors do you have?

Although all U.S. editions of Windows Vista are available in both 32-bit (x86) and 64-bit (x64) editions, the only retail edition that includes both 32-bit and 64-bit installation media is Windows Vista Ultimate.

The 32-bit versions support only 4GB of RAM (a limit imposed by the 32-bit architecture), but things get a lot more interesting when you consider x64 editions, and when you consider the number of processors supported. Table 2.2 lists the differences by edition.

NOTE

To order 64-bit DVD installation media (or 32-bit CD installation media) for retail editions of Windows Vista, visit http://www.microsoft.com/windows/products/windowsvista/editions/64bit.mspx

OEM editions of Windows Vista are sold in 32-bit or 64-bit versions only.

Table 2.2 Vista Hardware Support by U.S. Editions

Category	Feature	Editions Supporting This Feature
Processor support	Single physical processor	Home Basic Home Premium
	Dual processors	Business Enterprise Ultimate
Memory support in x64 mode	8GB	Home Basic
	16GB	Home Premium
	128GB	Business Enterprise Ultimate

Note that for the purposes of this table, a dual-core or quad-core processor still, of course, counts as a single physical processor.

The Power User's Favorites

With support for two physical processors and up to 128GB of RAM, there's no doubt that Business, Enterprise, and Ultimate will be the most desirable versions from a power standpoint.

If you want to keep your options open and don't need the additional management features of Enterprise, choose Business. It allows you to upgrade to additional features as desired.

However, Ultimate is the ultimate choice for many reasons:

- It offers every feature found in other editions.
- It supports the maximum amount of RAM in x64 mode.
- It supports two physical processors.
- It supports Ultimate Extras, downloadable bonus content available only to Vista Ultimate users.

The Rest

Home Premium is a definite step up from Home Basic and is the lowest-cost version to support the shiny Aero UI and multimedia goodies such as Media Center and Windows Movie Maker HD (an upgraded version of

MovieMaker 6 that supports HDTV). If you don't need multiple CPU support or corporate network features, it's a good choice. It hits the cost versus features "sweet spot" very nicely.

Home Basic should be used only on systems that simply can't run Home Premium or other Vista editions (such as systems whose graphics cards don't support DirectX 9 or DirectX 10). Although Home Basic features some of the improved applications and utilities of other Vista editions, its lack of support for Aero makes it most closely resemble an updated Windows XP Home Edition.

Differences in Non-U.S. Vista Editions

Because Microsoft is prohibited from bundling Windows Media Player with Windows in countries of the European Union (EU), Microsoft produces special versions of Windows Home Basic and Business for the EU market that do not include Windows Media Player. The EU version of Vista Home Basic is known as Vista Home Basic N, while the EU version of Vista Business is known as Vista Business N. As with Windows XP's N versions for the European Union, Windows Media Player can be downloaded separately.

Some countries in emerging markets will be able to buy a stripped-down version of Vista Home Basic known as Vista Starter. Vista Starter does not support home networking; supports a maximum of only three applications (windows) open at a time; does not use logon passwords or support fast user switching; and lacks the Aero interface, DVD maker, and photo editing.

Upgrading Vista Edition Features

One of the benefits of Windows Vista, compared to previous editions, is the ability to upgrade features if you use any U.S. version other than Enterprise. If you have Home Basic, Home Premium, or Business, you can use the Windows Anytime Upgrade feature to move up to a better version: no new DVD needed.

If you start with the best edition, Ultimate, you can also improve it with Windows Ultimate Extras. Thus, if you later wish you'd purchased a better edition, you're not stuck as you were with previous Windows versions. (You do, naturally, have to pay for the upgrade to a better edition. Microsoft isn't going to give you extra features for nothing, after all.)

No matter which edition of Windows Vista you select, though, there's still one more decision to make if you have an x64-compatible processor: Should you install the x64 (64-bit) version, or the x86 (32-bit) version?

Is 64-bit Vista Better?

In recognition of the dominance of 64-bit enabled processors in today's computing environment, Microsoft offers 64-bit and 32-bit versions of Windows Vista.

If you have a 64-bit processor in your desktop or notebook computer (see Table 2.3 for a listing), it's tempting to make the move to 64-bit land. After all, after years of battling file size and memory limits imposed by 32-bit operating systems, the allure of 64-bit computing is unmistakable: the end of the 4GB memory and file size limits, larger swapfiles, more-feature-rich and potentially faster programs. That's the dream of 64-bit computing, and Linux users running 64-bit distributions are already enjoying those benefits.

Table 2.3 x64-Compatible Desktop and Portable Processors from AMD and Intel

Vendor	Processor Family	Models	Computer Type
AMD	Athlon 64	(All)	Desktop
	Athlon 64 FX	(All)	Desktop
	Athlon 64 x2	(All)	Desktop
	Sempron	All models in Socket AM2; some models in Socket 754*	Desktop
	Mobile Athlon 64	(All)	Notebook
	Turion	(All)	Notebook
	Turion X2	(All)	Notebook
Intel	Pentium 4	All versions using Socket 775; also SL8JX model (2.8GHz) in Socket 478	Desktop
	Pentium D	(All)	Desktop
	Celeron D	Models 326, 331, 336, 341, 346	Desktop
	Pentium 4 Extreme Edition	3.73GHz	Desktop
	Pentium Extreme Edition	(All)	Desktop
	Core 2 Duo	(All)	Desktop, Notebook
	Core 2 Extreme	(All)	Desktop

* Some Sempron 2800+, 3000+ 3100+ and 3300+ processors in Socket 754 are 32-bit only. See www.amdcompare.com for details

However, we're talking about Microsoft Windows, not Linux, and Microsoft's first large-scale implementation of a 64-bit desktop operating system, Windows XP Professional x64 edition, was disappointing, to be polite. Some vendors never produced 64-bit drivers, and almost every vendor that did produce 64-bit drivers did it months after people needed them. The x64 edition of Windows XP wasn't any faster than the 32-bit version and lacked some features of the 32-bit version. If you look at Windows XP Professional x64 Edition as a first draft of the 64-bit versions of Vista, you ought to be concerned.

Our advice? Before installing the 64-bit version of your favorite Vista edition, make sure the hardware has 64-bit Vista drivers. If you're upgrading from an older version of Windows, back up your settings and data. Keep in mind that you can always install the 32-bit version to begin with and move to 64-bit when your hardware and utilities (antivirus, for example) are ready to support 64-bit operation. Applications that add functionality to the right-click menu (shell extensions) must also be rewritten to support x64. So, while I recommend x64 processors as the best platform type for Windows Vista today, make haste slowly to move to the x64 edition of Vista. Remember, you can always back up your data with the backup tools in Vista and restore the data back to your new x64 installation.

Supported Upgrade Paths

No matter which Windows Vista edition turns your crank (insert your favorite cliché for excitement here), if you're planning to buy an upgrade version and perform a by-the-book in-place (upgrade) installation, you *must* pay attention to Microsoft's upgrade paths. Thanks to product activation, Microsoft Windows Vista won't activate if you perform an in-place (upgrade) installation using the wrong combination of existing Windows version and Windows Vista edition. Table 2.4 shows you which editions permit an in-place installation and which editions require a "clean" install.

Table 2.4 Supported Upgrade Paths for Windows Vista Editions

Existing Operating System	Home Basic	Home Premium	Business	Ultimate
Windows 2000	Clean install	Clean install	Clean install	Clean install
Windows XP Home	In-place install	In-place install	In-place install	In-place install
Windows XP Tablet PC	Clean install	Clean install	In-place install	In-place install
Windows XP Media Center	Clean install	In-place install	Clean install	In-place install
Windows XP Professional	Clean install	Clean install	In-place install	In-place install
Windows XP Professional x64	Clean install	Clean install	Clean install	Clean install

"clean install" = An installation that replaces your existing Windows installation and requires you to reload programs, data files, and settings

"in-place install" = An installation that retains your existing programs, data files, and settings

NOTE

Before you perform a clean install, be sure to run Windows Easy Transfer to transfer files and settings (files only from Windows 2000) to a network folder, removable media, or an external hard disk for re-installation after you have completed your Windows Vista installation and re-installed your applications.

➩ To learn how to perform a "clean" install the Windows Vista way (yes, it's different), see "Clean Installation from an Upgrade DVD," Chapter 3, p. 51.

Part II

Getting to Work with Vista

3 Installing Windows Vista 37

4 Mastering the Vista User Interface 73

5 Vista Tools for Faster and Better File Organization 97

6 Mastering Your Hardware and Environment with Vista 121

7 Managing Your Contacts with Vista 151

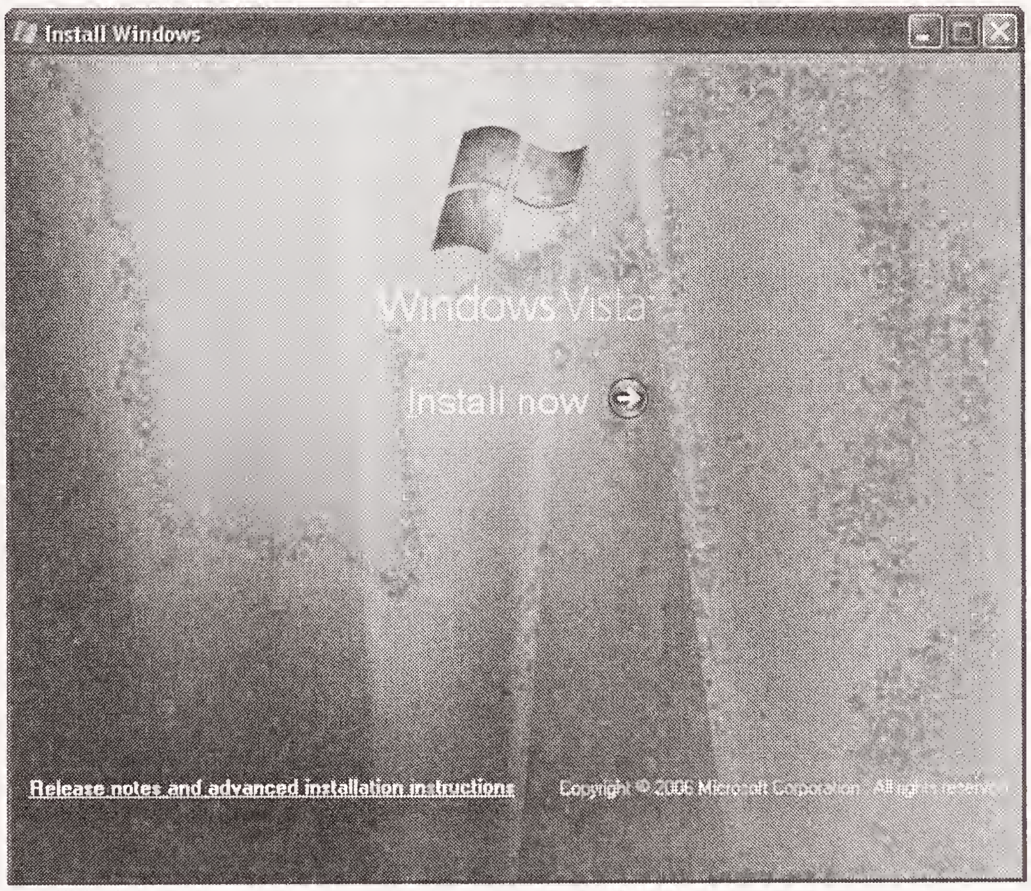
Chapter Three

Installing Windows Vista

IN THIS CHAPTER

- How to Figure Out Which Installation Method Is Right for You
- Why Clean Install Rules!
- Running a Clean Install
- Clean Installation from an Upgrade DVD
- Dual-Booting Vista and Your Old Windows
- Seeing System Details
- Transferring Settings with Windows Easy Transfer

How to Figure Out Which Installation Method Is Right for You


Install Windows
Windows Vista
Install now
Release notes and advanced installation instructions
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So, you've digested the information in Chapter 2, "The Many Editions of Windows Vista," and have purchased the edition you prefer. After shredding the shrink-wrap, you're ready to pop the DVD into the drive and start the install process. Take a deep breath (or two), slow down, and think for a moment. If your "dream Vista machine" is already running a previous version of Windows, you have some choices to make:

- Start the system and, after it boots into Windows, insert the DVD to run an upgrade installation.

- Start the system and, after it boots into Windows, insert the DVD to install Vista to an unused portion of the current hard disk; this creates a clean installation with a dual-boot option.
- Perform a "clean" installation (either from within your existing version of Windows or by booting from the DVD).

NOTE

An "upgrade" installation, despite the name, installs a clean copy of Windows Vista to replace your old Windows version. However, during the process, existing program, user, and driver settings are used to configure the Vista installation. Because this type of upgrade converts your old settings to the new system, the odds of problems and poor performance are much higher than with a fresh install.

Why Clean Install Rules!

Here at *Maximum PC*, we freely admit we're biased—we *love* clean installs! Here's why:

- A clean install enables Vista to run without worrying about its tripping over the debris of the old version(s) of Windows previously installed on the system.
- A clean install gives you the opportunity to install RAID or SATA drivers.
- A clean install helps prevent hardware problems caused by outdated drivers.
- A clean install gives you a blank slate to install only the programs you really need.
- A clean install doesn't carry over the digital "junque" left over from unwanted preinstalls, trial programs you've forgotten to uninstall, and the like.
- A system with a clean install usually runs faster than a system with an upgrade install.
- A clean install enables you to prepare the hard disk with the partitions you want and enables you to install Windows Vista to a bigger hard disk so you have enough room for more digital goodness!

WARNING

If you use an SATA drive or RAID array, you may not be able to perform an upgrade installation of Vista. Use an upgrade installation only if your current version of Windows uses a standard ATA/IDE hard disk or an SATA or RAID implementation that is integrated into the motherboard's South Bridge or I/O Controller chip.

Alternatives to a Clean Install

What about the alternatives? A dual-boot installation gives you every benefit of a clean install, and it lets you boot back to your old version of Windows when you need to. If you have only one experimental "FrankenPC" for tests and experimentation, this is a way to get double duty from a single PC.

We don't like upgrade installations as a rule (and they're more difficult to perform successfully), but there are a couple of reasons to choose an upgrade installation instead:

- An upgrade install that works gets you back to work faster because your existing applications and data aren't affected.
- An upgrade installation enables you to use preinstalled applications with a new operating system (assuming they're compatible with Vista).

Still unsure which way to go? With three options to choose from, flipping a coin won't help (unless "edges" is a choice where you come from), but Table 3.1 can help make your choices clearer.

NOTE

If an upgrade installation goes awry, don't panic! Vista will restore your existing version of Windows when you restart your system.

Table 3.1 Comparing Windows Vista Installation Options

Installation Type	How Installation Started	Target	Preserves Existing Software, Settings	Enables Installation of RAID and SATA Drivers	Likelihood of Success
Upgrade	From within existing Windows installation	Upgrades existing Windows installation	Yes	No	Varies
Clean install	Boot from full retail or OEM version Vista DVD or from within Windows when using an upgrade Vista DVD*	Empty hard disk or existing disk partition	No	Yes	High
Dual-boot	From within existing Windows installation	Unpartitioned space on current Windows hard disk	No	Yes	High

**To learn how to use a Windows Vista upgrade DVD to perform a clean boot, see the section "Clean Installation from an Upgrade DVD."*

Before You Install Vista

We have just a few cautions before you punch your ticket for Clean Install Land at VistaWorld:

- Use a new hard disk, preferably a 200GB or larger ATA or SATA drive, as your target drive instead of wiping out the contents of your current drive. Even if you back up everything important from an existing drive, if you wipe out everything to install Vista, Murphy's Law may turn your

TIP

If you received a special restore CD with your system, find out from the vendor what the restrictions are on reinstalling applications.

TIP

Check out Partition Magic at Symantec's website (www.symantec.com). Learn more about Partition Commander at Avanquest Publishing's website (www.v-com.com). If you're looking for free open-source disk-resizing products and don't mind using a bit of Linux along the way, consider the bootable SystemRescueCd (www.sysreccd.org), which includes the graphical QtParted partition resizing program or the GNOME Partition Editor (Gparted), which is available as a bootable "live" CD from http://gparted.sourceforge.net.

backup into useless bits of information, or you might forget to back up information that's not stored in each user's My Documents folder.

- If you have purchased the upgrade version of Windows Vista and want to upgrade to a new hard disk for the installation, see the section "Clean Installation from an Upgrade DVD" for pointers.
- Make sure that you have installable media for the applications you want to install into Vista. If your system included preinstalled OEM versions of Microsoft Office or other productivity applications, you might not be able to reinstall them if you decide to do a clean install. The restore CD or restore partition on such systems is usually designed to restore applications only back to their original preinstalled state. If your system falls into this category, either buy installable copies of your applications or bite the bullet and perform an upgrade installation.
- If you decide to use an SATA hard disk, make sure that your system uses a host adapter integrated into the chipset, or that you have a Vista-compatible driver for other types of SATA host adapters, such as an SATA host adapter in a PCI or PCIe slot or a motherboard-based SATA host adapter that uses a dedicated chip.
- If you don't want to install another hard disk in your system, but you have at least 50GB of unused space on your current hard disk, create a new partition for Vista with a program such as Symantec's Partition Magic, Avanquest Publishing's Partition Commander/Partition Commander Pro, or similar products. Unlike Windows XP's Disk Management, these programs can safely shrink an overgrown partition to make room for a new operating system. Just make sure to back up all your most important data, just in case!
- Make sure you have downloaded updated Vista drivers for your PC's hardware.

Making Sure Your System Is Vista-Ready

To make sure your system is ready to get the most out of Vista, check the following:

If you're planning to use the multimedia features in Home Premium or Ultimate, make sure you're using a fast 64-bit processor, preferably a dual-core or quad-core version. Desktop processors such as the Intel Core 2 Duo, Core 2 Quad or Core 2 Extreme or the AMD Athlon 64 X2 are preferred. Laptops with the Intel Core 2 Duo or AMD Turion 64 X2 are also great Windows Vista platforms. You can get by with fast single-core processors such as the Intel Pentium Extreme Edition, AMD Athlon 64 or 64 FX, or Turion 64. However, older processors (Pentium 4, Pentium D, Celeron D, and Sempron) are a bit slow for good multimedia performance, but will be OK for basic web-surfing and office automation if you have enough RAM.

Figure on needing at least 1MB of *available* RAM for Windows Vista. If your system uses integrated graphics (a common feature in many notebook computers and a lot of econobox PCs), better plan on having at least 1.5GB installed (many integrated graphics solutions use 128MB or more of system RAM). More RAM won't hurt, either, especially if you want to move to a 64-bit version at some point.

If you're looking at any Windows Vista version other than Windows Vista Basic, you need to be concerned about graphics. If your system's graphics feature full DirectX 9 feature support in hardware, at least 64MB of RAM available for graphics *and* support from a Vista WDDM graphics driver, you can enjoy the 3D coolness of Aero. If you want to see which chipsets we prefer, check out recent back issues of *Maximum PC* or the reviews section on our website, www.maximumpc.com/reviews.

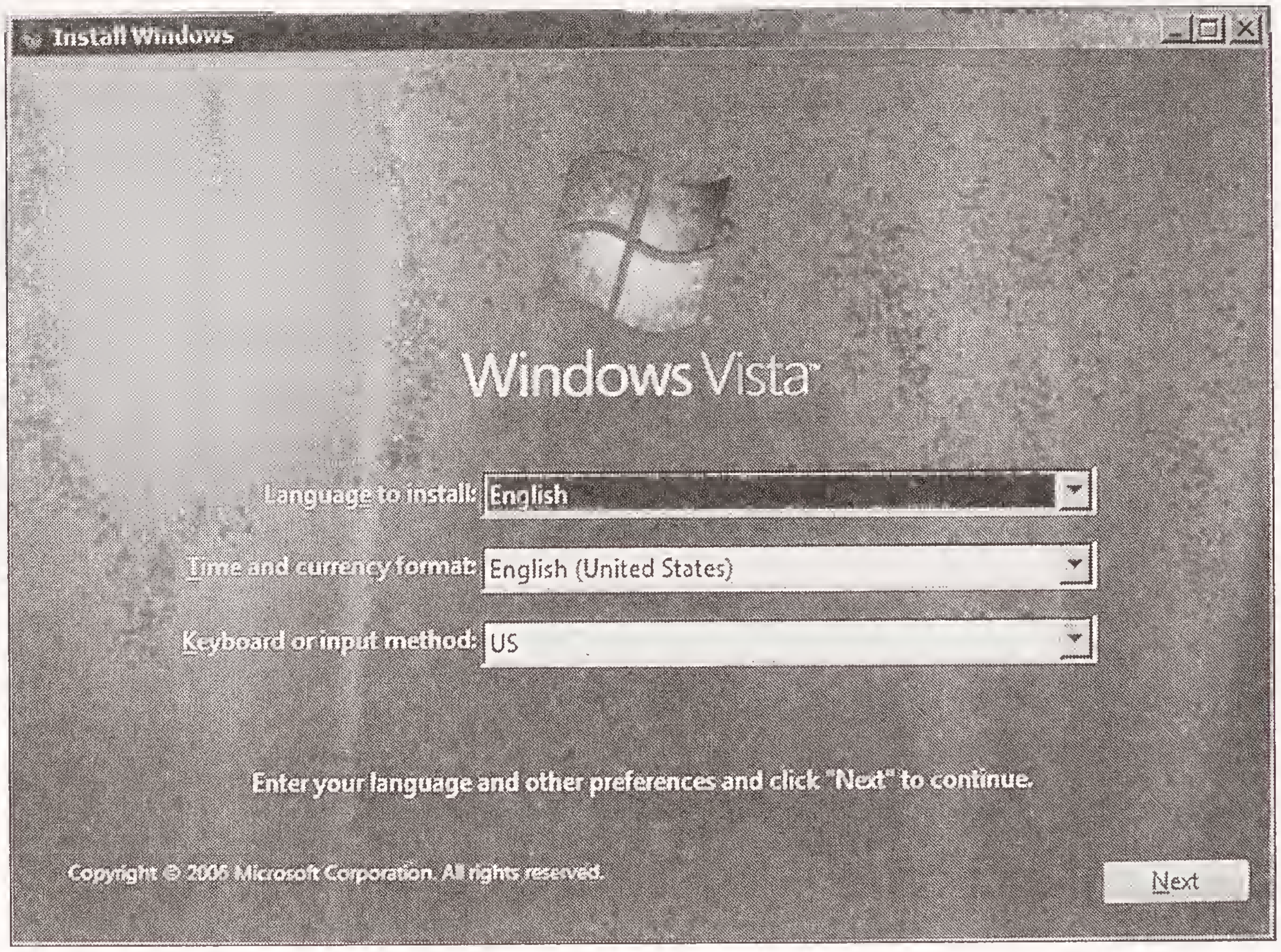
To find out what your system has "under the hood," you can use the Microsoft Windows Vista Upgrade Advisor (available from www.microsoft.com/windows/products/windowsvista/default.mspx) and the System Requirements Lab analyses available from the ATI section of the AMD website (ati.amd.com) or from the NVIDIA website (www.nvidia.com). The Windows Vista Upgrade Advisor also checks programs for compatibility (useful if you're considering an upgrade installation or reinstalling existing applications after a clean install) and provides a list of tasks to perform before and after installing Windows Vista.

Running a Clean Install

If you have purchased the full retail version of Windows Vista or an OEM version, you have a version designed for clean installation to an empty hard disk.

⇨ To learn how to perform a clean install from an upgrade DVD, see "Clean Installation from an Upgrade DVD," this chapter, p. 51 after reading this section

Performing a clean install with Windows Vista requires a lot less babysitting than with previous Windows versions. Simply insert the DVD into a bootable DVD drive, restart your system, and press a key when prompted to boot from the DVD, and Vista starts loading files. Instead of filling the screen with a list of files as in the Windows 2000 and XP installation processes, Vista uses a simple moving-bar graph to indicate the progress of the file-loading process. After all the files are loaded, Vista prompts you to select the install language, time and currency format, and keyboard or input method (see Figure 3.1). Make your choices and click Next to continue.



Language to install: English

Time and currency format: English (United States)

Keyboard or input method: US

Enter your language and other preferences and click "Next" to continue.

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Figure 3.1

Vista's first install dialog prompts you for language, format, and keyboard settings.

Vista prompts you to start the installation with a big Install Now button. Click it to get going. If you want to learn more about the release before installing it, click the Release Notes and Advanced Installation Instructions link. As with other recent Windows releases, booting from the Vista media can also be used to fix problems with the system. If your system is loaded down with so many gremlins that it can't even start up normally, click the System Recovery Options link to see what Vista can do to help you out.

⇨ To learn more about system recovery options, see " Using the Windows Vista Recovery Environment," Chapter 15, p. 379.

Setting Up the Installation

Remember how you've needed to baby-sit previous Windows installations? You couldn't just walk away and let Windows do its install thing, but instead had to periodically reassure your new operating system that you cared by clicking a dialog box or two over and over again, ad nauseam. Those days are over. Vista's staged installation process places all the configuration tasks at the end of the process, so you can spend your time doing something other than staring at the screen and waiting for the next prompt.

Vista divides the setup process into two steps: Collecting Information and Installing Windows. The current step is highlighted in bright white at the bottom-left corner of the screen. A green moving bar over each step indicates the progress of that step.

First, you enter the product key. Microsoft has decided that the tabbing from window to window method it's used for years is overdue for replacement. With Vista, you just type in each section of the key, and Vista puts in the dashes for you (see Figure 3.2).

To avoid being nagged to activate Windows after installation, you can check the Automatically Activate Windows box below the product key. Click Next to continue.

Next, you're prompted to accept the license terms. Click I accept... and then click Next to continue.

TIP

You can skip the option to enter the key when prompted, but if you do, you won't be able to activate your copy of Windows Vista until you provide this information, and you'll need to choose the edition you purchased on the next dialog. Enter the key at this point and save yourself some annoyance later.

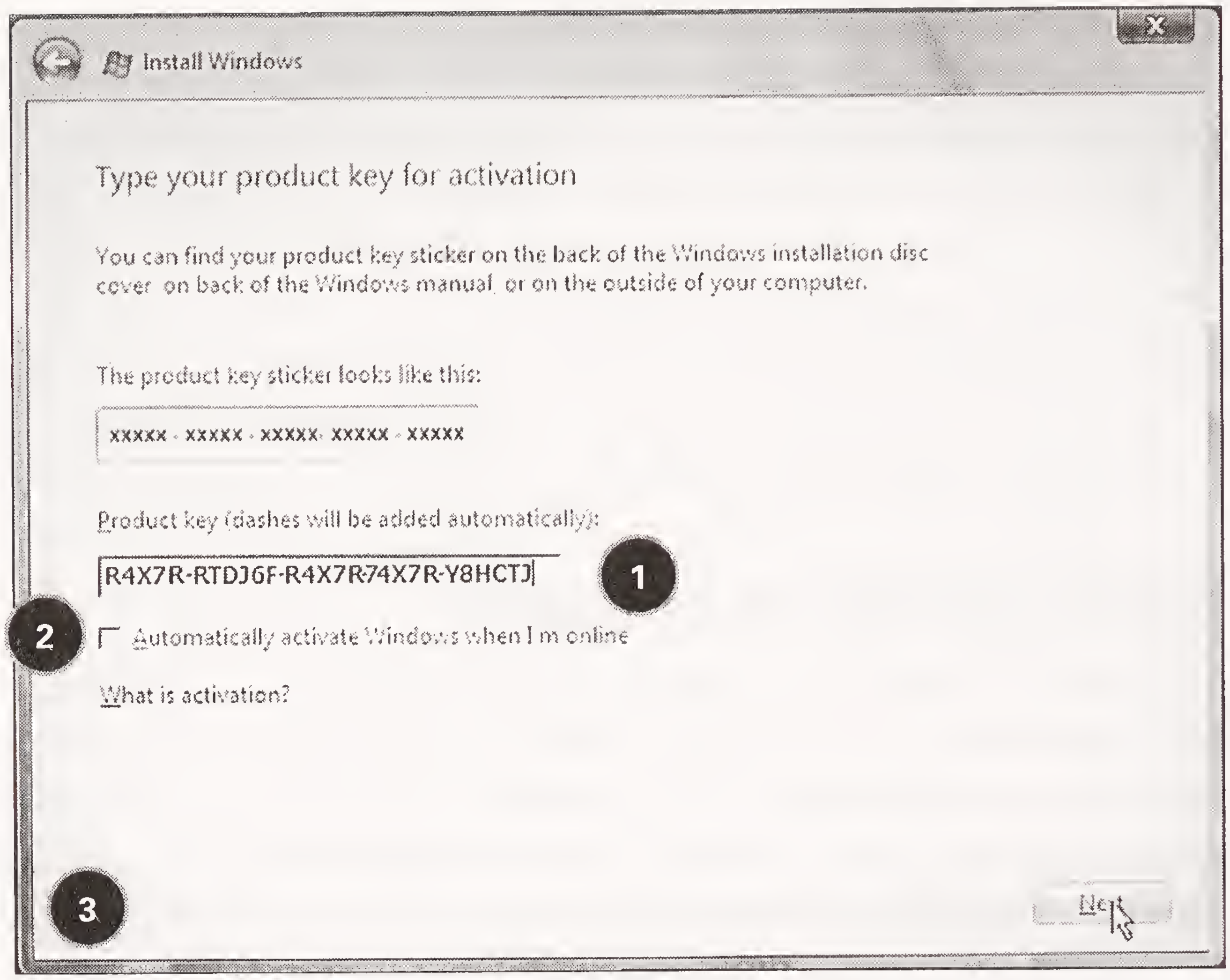
TIP

IIf you're not sure the system you're using for Vista is going to be suitable, make sure the automatic activation check box is cleared. There's no need to rush this step. As with previous versions, you have 30 days before you must activate Vista.

① Product key

② When checked, activates Vista automatically when you go online

③ Current step in setup process



Type your product key for activation

You can find your product key sticker on the back of the Windows installation disc cover on back of the Windows manual or on the outside of your computer.

The product key sticker looks like this:

xxxxx - xxxxx - xxxxx- xxxxx - xxxxx

Product key (dashes will be added automatically):

R4X7R-RTDJ6F-R4X7R74X7R-Y8HCTJ

☐ Automatically activate Windows when I m online

What is activation?

Figure 3.2

Is a single product key entry window simpler? Vista thinks so. (Note that this key is fictitious—no free Vista for you!)

You can install Vista as either an upgrade or as a Custom (clean install). However, you must run an upgrade or dual-boot installation from within your existing copy of Windows (as opposed to booting from the Vista DVD). Click Help Me Decide if you're still on the fence about which installation type to use, or click Custom (advanced) to keep going with a clean install.

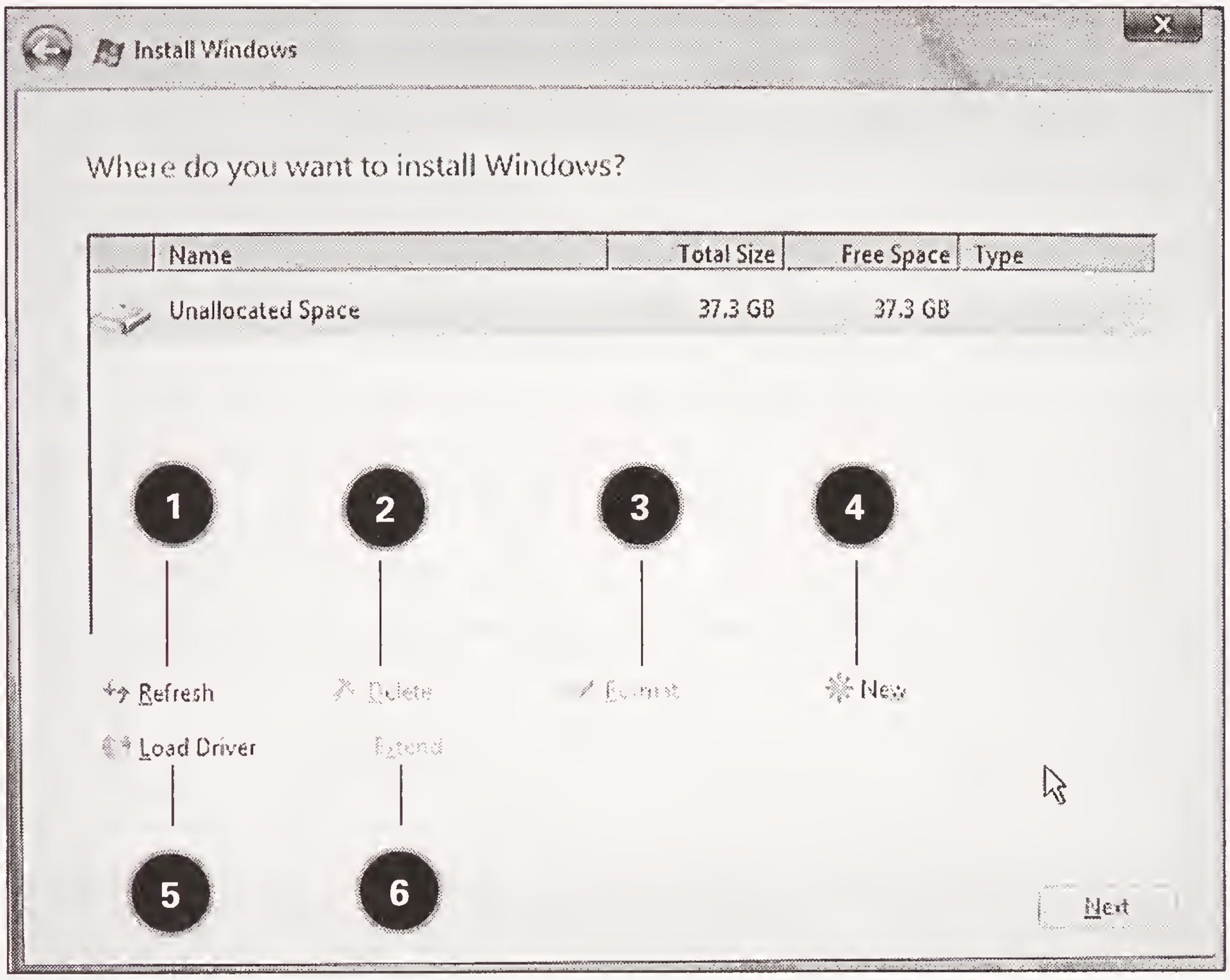
Disk Preparation Options

The next dialog asks "Where do you want to install Windows?" If you're using Windows Vista Ultimate edition and plan to use BitLocker full-disk encryption, you should just click Next, which sets up the entire hard disk as a single partition.

⇨ To learn more about configuring BitLocker with Windows Vista Ultimate edition, see " Using BitLocker," Chapter 14, p. 349.

You can also click Next if you don't want to use a separate drive letter for your data files with any Windows Vista edition. That's the easy way, but if anything happens to the C: drive... kiss your data goodbye (unless you've backed it up regularly).

Although Windows Vista's integrated backup tools make it easy to back up your data, regardless of where it is located, you might prefer to create two partitions: one for Windows and your applications, and another (larger) one for your data. To set up your drive this way, or to handle other problems (such as an unrecognized drive or partitions that need to be removed or resized before installing Vista), click Advanced (see Figure 3.3).



Where do you want to install Windows?

	Name	Total Size	Free Space	Type
	Unallocated Space	37.3 GB	37.3 GB	

Figure 3.3

Advanced hard disk preparation options. Some options here are disabled until after you create a disk partition.

① Refreshes drive display (use after loading drivers for unrecognized drives)

② Deletes the selected partition

③ Formats the selected partition

④ Creates a new partition

⑤ Loads drivers for unrecognized media

⑥ Enlarges selected partition

If you want to place your data on a drive other than the system drive, you need to allocate about 30–50GB for Windows Vista and your applications, and use the rest of your hard disk for a separate data drive. As soon as you start Windows Vista, you need to configure Windows Vista to use the data drive for user folders. See the sidebar "Inside Vista's User Folders," Chapter 5, p. 99, for details.

If you plan to use BitLocker with the Enterprise edition, you need to create a 1.5GB partition for booting the system, and use the remainder of the hard disk as a single partition that BitLocker will encrypt. You must use the command-line **Diskpart** program to set up partitions if you plan to use BitLocker, rather than the

TIP

Vista uses binary MB (1024MB=1GB), not decimal MB (1000MB = 1GB). Thus, if you want to create a 40GB (binary) partition for Vista, enter 40960MB or use the arrows to scroll to the partition size you want.

TIP

There's no need to worry about the unpartitioned disk space during a Vista installation. After Vista is installed, you can use the Disk Management tool (covered in Chapter 6, "Mastering Your Hardware and Environment") to create an extended partition and logical drive for your data, or you can extend your system or other partitions into the unpartitioned disk space.

CAUTION

If you decided to swap out your old hard disk and install a new hard disk for your Windows Vista installation, and Windows Vista can't "see" it, it may not be properly connected to your system. Shut down the computer, turn off or disconnect the power supply from AC wall current, and make sure the power lead from the power supply is properly connected to the hard disk. If you're still using ATA/IDE drives, check the jumper settings on both drives.

Windows Vista installation GUI shown in Figure 3.3. See the sidebar "Hard Disk Setup for BitLocker," p. 47, this chapter, for details.

To create a disk partition for Vista, click New (refer to Figure 3.3) and, in the size field that appears, enter the size of the desired partition in MB; then click the Apply button next to the field. (You can also click Cancel, if you change your mind.)

Vista creates partitions using NTFS; FAT32 is no longer an option, as it was with Windows XP. Using NTFS enables Vista to provide user-level security for files and folders, as well as better protection against disk errors. Vista can still read FAT32 and FAT-based drives, such as USB flash or external hard disks, though.

If you specified too small a partition size, you can make it bigger. Click Extend (refer to Figure 3.3), and enter the size you want. Click Apply, and a warning dialog appears, reminding you that you can't undo this particular option (most other installation options can be revised before you proceed). Click OK to have Vista resize the partition.

If your target drive is not visible to Vista, you probably need to install drivers for it. This happens most often when you're installing to any type of RAID array, or to an SATA drive that uses a separate host adapter instead of SATA support in the motherboard's chipset. Occasionally a motherboard with a discrete SATA chipset may also require separate installation drivers.

To load these specialized drivers, click Load Driver from the Where Do You Want to Install Windows? dialog shown previously, in Figure 3.3. Insert the installation media when prompted and click OK. Vista (unlike Windows XP), recognizes that the floppy drive is no longer present on many systems, so you can use a CD, DVD, or USB flash drive as well as the venerable floppy disk as a source medium for your drivers. It's about time!

After loading the drivers for your hard disk or disk array, click the Refresh button to display your drive.

After creating a disk partition, click it and click Next to continue. An Installing Windows display appears. At this point Windows

Vista takes over the process and handles the bulk of the remaining installation chores. The best thing you can do at this point is find something useful to do until you are prompted to configure Windows (next section). That stack of dishes in the kitchen won't take care of itself, after all.

Hard Disk Setup for BitLocker

If you're tired of reading about how lost laptops or stolen desktops are putting personal and company information at risk (or maybe *your* system and its valuable information has come up missing) and you use Windows Vista Ultimate or Enterprise, you can fight back against data thieves by configuring your system to use BitLocker disk encryption. The process of enabling BitLocker is covered in Chapter 14, but you can't use BitLocker unless your hard disk is correctly prepared. BitLocker uses a 1.5GB partition as the active partition for booting Windows Vista, and the remainder of the hard disk is encrypted by BitLocker. Nobody's getting *anything* off a BitLocker-encrypted hard disk without the proper BitLocker credentials (believe me, I've tried!). Windows Vista Ultimate users can download a free Ultimate Extra to repartition their hard disks for BitLocker, but if you prefer to do it manually (or if your company is using the Enterprise edition), follow these directions for setting up your hard disk (warning—command prompt ahead!):

1. Start your system with the Windows Vista product DVD.
2. Configure the installation language, time, currency format, and keyboard layout. Click Next to continue.
3. Click System Recovery Options.
4. Open the command prompt window.
5. Type `Diskpart` and press Enter. The Diskpart program is a special command shell that enables you to perform a series of commands to partition the hard disk.
6. Enter the command `select disk 0` to select the first hard disk.
7. Enter the command `clean`. This erases the existing partition table (if any).
8. Enter the command `create partition primary size=1500`. This partition will be used to boot the system, so it must be configured as a primary partition.
9. Enter the command `assign letter=S`. This partition will be called S:.
10. Enter the command `active` to make this partition the active partition.
11. To use the remainder of the disk, enter the command `create partition primary`. This partition will be the installation target for Windows Vista.
12. To configure this partition as the C: drive, enter the command `assign letter=C`.

13. Enter `list volume` to see a display of all the volumes on this disk. You will see a listing of each volume, volume numbers, letters, labels, file systems, types, sizes, status, and information. Make sure two volumes are listed, that they use the NTFS file system, and that you know the disk labels.
14. Enter the command `exit` to close Diskpart.
15. Enter the command `format c: /y /q /fs:NTFS` to format the C: drive.
16. Enter the command `format s: /y /q /fs:NTFS` to format the S: drive.
17. Enter the command `exit` to close the command prompt and return to the System Recovery Options dialog box.
18. In the System Recovery Options window, use the Close icon in the upper right (or press Alt+F4) to close the window to return to the main installation screen. (Do not click Shut Down or Restart.)
19. Click Install Now and proceed with the Windows Vista installation process as described elsewhere in this chapter. Install Windows Vista on the larger partition, Disk 0 Partition 2. Do *not* repartition or erase the drive letters you created with Diskpart; just install Vista to the C: drive.

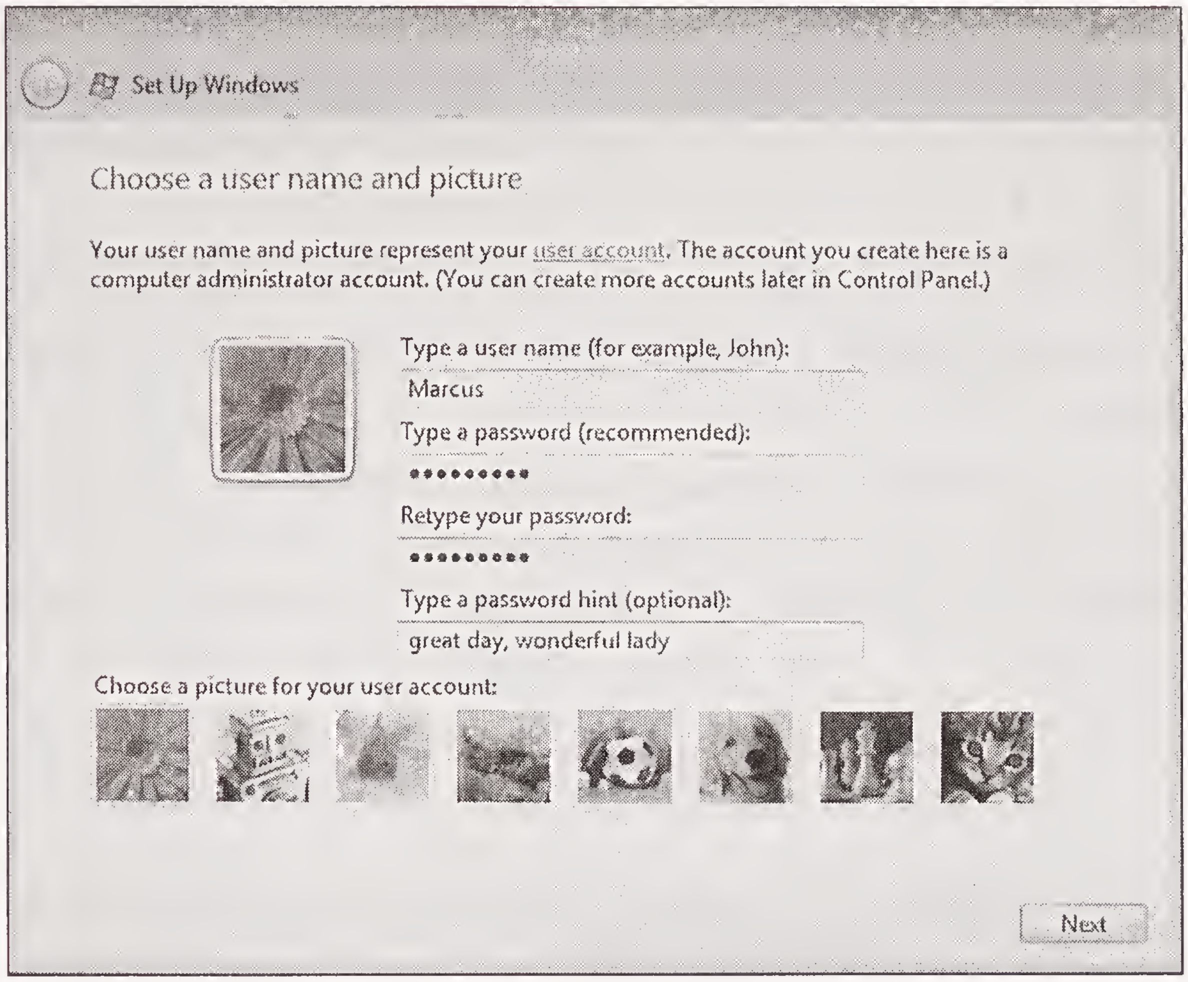
At the end of the installation process, your system will use the C: drive as it normally does, but the boot files reside on S: When you enable BitLocker, it encrypts the files on C: drive, so keep your data files on C: drive and they will be encrypted along with the rest of the C: drive.

➪ To learn how to set up and use BitLocker, see "Using BitLocker," Chapter 14, p. 349.

Configuring Vista

After Vista is installed, it prompts you to enter your username and password and select a picture for the administrator account when prompted (see Figure 3.4). You can also provide a password hint if you like.

Click Next to keep going.



Choose a user name and picture

Your user name and picture represent your user account. The account you create here is a computer administrator account. (You can create more accounts later in Control Panel.)

Type a user name (for example, John):
Marcus

Type a password (recommended):
•••••••••

Retype your password:
•••••••••

Type a password hint (optional):
great day, wonderful lady

Choose a picture for your user account:

Figure 3.4

Setting up the administrator's username and password.

Strong Protection Begins with Strong Passwords

Whether you share your home computer with teenaged hackers who'd like nothing better than to score some points off Mom or Dad, or you carry the secrets of the free world on your laptop, a strong password is your first line of defense against unauthorized use. Don't even *think* about setting up an administrator-level user without a strong password, and every standard user should also have his or her own strong password, too.

Microsoft's Password checker page (*https://www.microsoft.com/athome/security/privacy/password_checker.mspx*) recommends that you use a password of 14 characters or longer, that contains a mixture of uppercase and lowercase letters, numbers, and symbols. Use the Microsoft Password checker to see how strong (or how weak) your password is.

NOTE

If you're sharing your Windows Vista PC with other users, you add their usernames and accounts with the Users applet in Control Panel after you start Windows Vista for the first time. See "Managing User Accounts and Family Safety," Chapter 14, p. 329, for details.

Vista adapts your username to create a computer name. Keep it, or enter the name you prefer. Click a desktop background (change it later if you're not amped up about the current choices) and click Next to continue (see Figure 3.5 A).

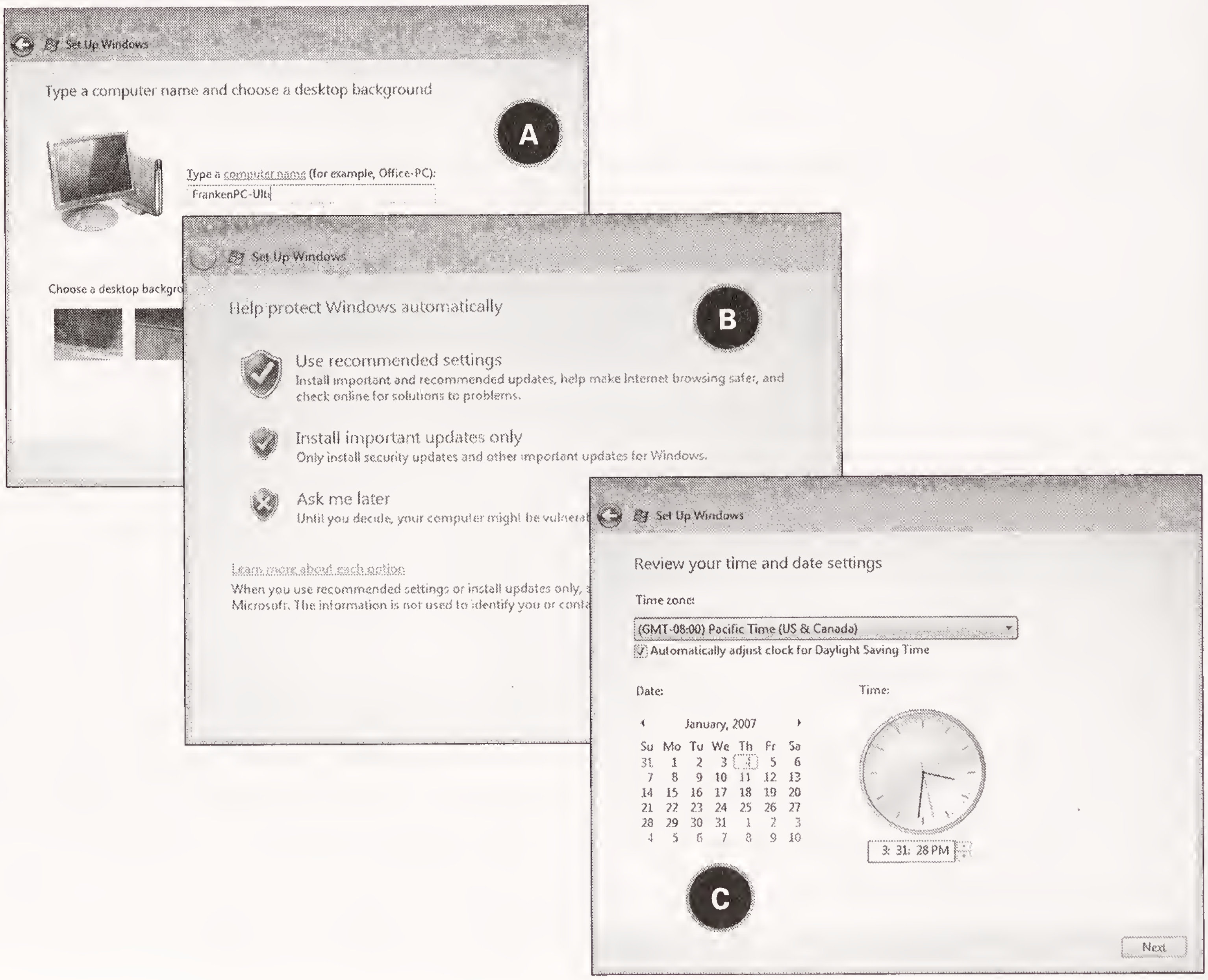
Select an option for configuring Windows security and select other options. To put off this decision, click Ask Me Later (see Figure 3.5 B).

After you choose a security option, Vista setup displays the time and date dialog shown in Figure 3.6 C. Unless you're a "Left Coastie," you'll need to make some adjustments. Click Next to continue.

A Setting up the computer name and desktop background

B Selecting how you want to receive security and Vista updates

C Vista setup's time and date dialog



Type a computer name and choose a desktop background

Type a computer name (for example, Office-PC):

FrankenPC-Ults

Choose a desktop backgro

Help protect Windows automatically

Use recommended settings
Install important and recommended updates, help make Internet browsing safer, and check online for solutions to problems.

Install important updates only
Only install security updates and other important updates for Windows.

Ask me later
Until you decide, your computer might be vulnerat

Learn more about each option
When you use recommended settings or install updates only,
Microsoft. The information is not used to identify you or conta

Review your time and date settings

Time zone:
(GMT-08:00) Pacific Time (US & Canada)
☑ Automatically adjust clock for Daylight Saving Time

Date:

January, 2007

Su	Mo	Tu	We	Th	Fr	Sa
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Time:
3: 31: 28 PM

Figure 3.5

Configuring Windows Vista during installation.

The final screen of Vista's installation serves at its own reward. It says, quite simply, "Thank you" and presents a dandy Vista logo. Click the Start button, and you're ready to get Vista-ing.

Clean Installation from an Upgrade DVD

So, you're sitting there with a year-old Windows XP installation that's already showing some signs of age. Your hard disk is full of useless software gizmos you've never bothered to uninstall, the system's acting cranky, and you've already backed up your system's files and settings with Windows Easy Transfer. You qualify for a Windows Vista upgrade, and you've dutifully gone out and bought one.

The Windows Vista box says you can do a clean install, so you start the installation process by booting from the Windows Vista DVD. You enter your product key when prompted, and the Windows Vista installer says, "To use the product key you entered, start the installation from your existing version of Windows." That's the last thing you expected to see.

What's up? Microsoft's Vista installer doesn't check your hard disk to see whether you have an installation of Windows ready to be replaced, nor does it ask for qualifying media as previous versions of Windows did when performing a clean install. As a result, whether you boot your system from the Windows Vista upgrade DVD to perform a clean install over your existing Windows installation or to an empty hard disk, you're seemingly out of luck.

However, there are three ways to beat the system:

According to Microsoft's Knowledge Base article 930985 (http://support.microsoft.com/kb/930985), method number 1 is to start the installation process from within a version of Windows that qualifies for the upgrade to Windows Vista (such as Windows XP):

1. From the opening dialog, click Install Windows Vista.
2. When prompted for the installation type, select Custom.
3. Select the partition containing your current Windows installation.
4. You will see a dialog indicating your current Windows installation will be moved to a folder called Windows.old. Click OK.
5. The installation continues until complete. When it is finished, you will boot into a new Windows Vista installation that did not inherit settings (or problems) from your old installation.

This method works, but it has some disadvantages:

- Your old Windows installation is still sucking up a lot of disk space on your system; to get rid of it, you will need to remove the \Windows.old folder.
- If you have already removed your old Windows installation by repartitioning your hard disk, you would need to reinstall your old version of Windows to make a place to start the new installation from. What a bother (not to mention a waste of your time)! And, if your Windows installation CDs are lost or missing, you're up a creek.
- If you are installing to a new hard disk, you would need to copy the Windows installation from the old hard disk to the new hard disk (using the drive vendor's copy utility) to enable Method 1 to work. Again, what a waste of time!
- If your current system drive has a partitioning scheme you want to change, you can't do it during the installation process. You'll need to use Windows Vista's souped-up Disk Management tool to make changes later (see Chapter 6).

Ready for Method 2? Microsoft says you can just buy a full product license and use it for a clean install. Imagine that! You qualify for an upgrade, but if you don't use it the way Microsoft wants you to, you're out of luck.

Fortunately, there's a third method you can use: install Windows Vista without a product key, and then upgrade Vista (no key) to Vista (with a product key). Thanks to WinSuperSite.com's Paul Thurrott for digging up this option. Here's how it works:

1. Boot your system from the Windows Vista DVD.
2. Select Install Now from the opening dialog.
3. When prompted for the product key, *do not enter it*. Clear the Automatically Activate check box. Click Next.
4. A pop-up window asks if you want to enter your product key now. Click No.
5. Select your Windows Vista edition from the menu—and don't try any funny business in this step, like selecting Windows Vista Ultimate if you're installing from a Home Premium DVD. The product key you enter later in the process determines what product you bought, and if the key doesn't match the Windows Vista edition, you're busted!

6. After selecting the correct product, click the checkbox and click Next. From here the installation proceeds just like it would if it were a clean install.

After the installation is complete and Windows Vista boots, start the Windows Vista setup program (setup.exe) from the DVD. Select Install Now from the opening dialog and, when prompted, enter your product key (click Next to continue). After accepting the license terms, select Upgrade as the installation type, and click Next. The installation completes normally.

When it's finished, you have performed a clean install using an upgrade Windows Vista DVD—and they said it couldn't be done!

Dual-Booting Vista and Your Old Windows

In my office, I always have a spare PC or two sitting around for experimentation. My test PC is known as "FrankenPC," because it's had more transplants than Dr. Frankenstein's classic monster! However, you might not be able to dedicate a PC to Vista. If you need to use a single PC to run your choice of Vista or an older version of Windows, consider performing a dual-boot installation.

A dual-boot installation, like a clean install, uses empty disk space and results in a brand-new Windows installation that needs applications and data files loaded to become a working system. So, what's the difference?

- You start a dual-boot installation from within your current Windows version.
- You specify an unused primary partition (or unallocated space) on your current hard disk as the target.
- When you finish the installation and restart your system, your computer displays a boot menu (see Figure 3.11, p. 58), enabling you to choose from your previous Windows version or Vista.

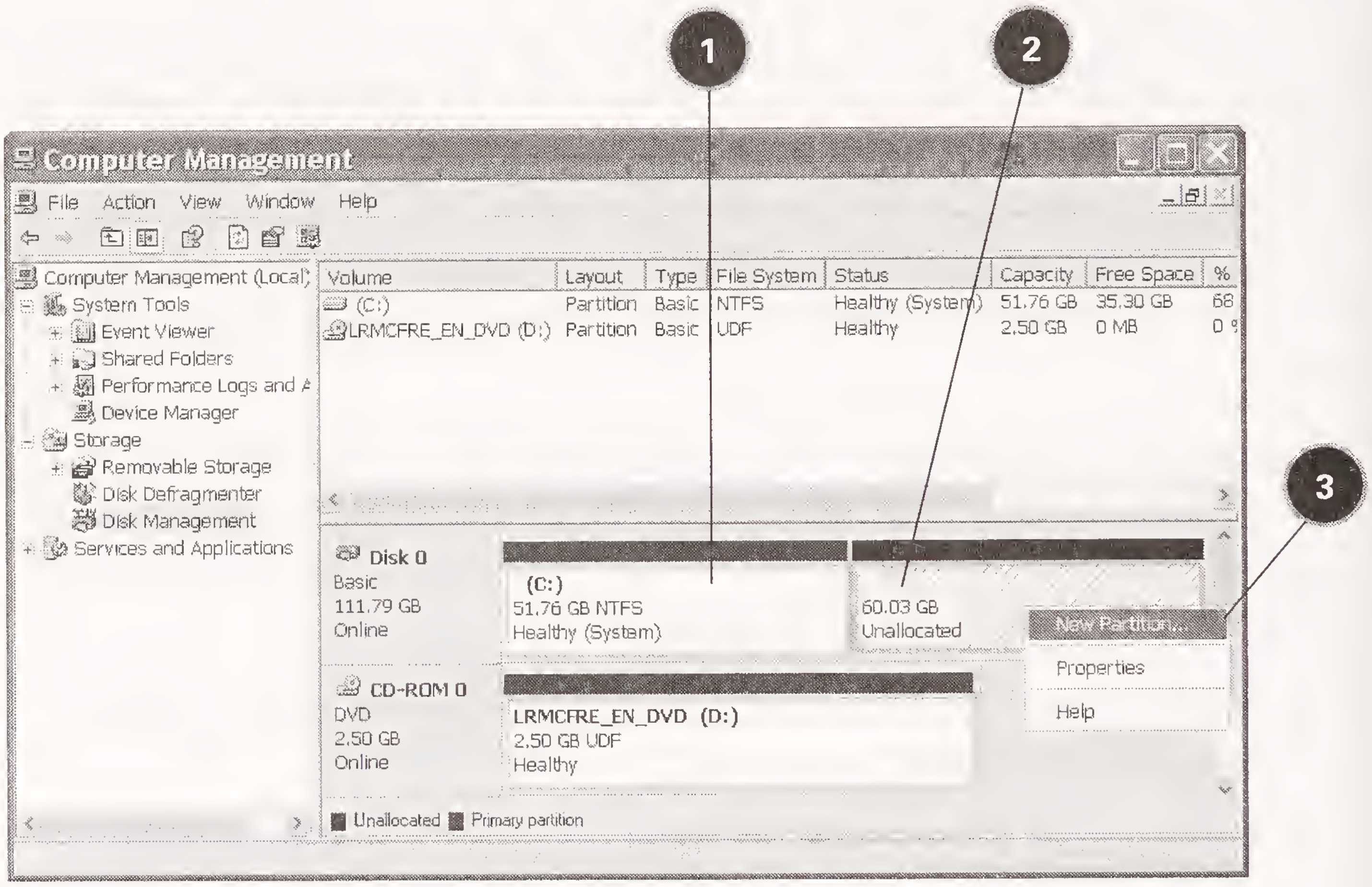
A dual-boot installation is a perfect way to use Vista while maintaining an existing version of Windows for work (or play!).

TIP

If your system BIOS enables you to select a different hard disk at boot time, you can use that option to select your operating system. Systems with this option prompt you to strike a specified key at startup to select a boot drive. To use this feature, install a new hard disk and perform a clean installation, while keeping your current hard disk in your system. Then, select the hard disk you want to boot from when you start your system.

Creating a Primary Partition for a Dual-Boot Install

Although Vista can prepare unallocated space when you boot from the DVD and perform a clean install, Vista can only be installed to an existing disk partition when you perform the installation from within Windows. Thus, if you have sufficient unpartitioned space on your hard disk (I'd recommend at least 50GB), you need to run Disk Management or another disk-preparation program to create a primary partition on the empty space before starting a dual-boot installation of Vista. To start Disk Management in Windows XP, right-click My Computer and select Manage. This starts the Computer Management Console. Click Disk Management from the Storage section of the console tree, and the installed drives are displayed in the right-hand window. Right-click the unallocated space on your system drive and select New Partition (see Figure 3.7).


1
2
3
Computer Management
File Action View Window Help
Computer Management (Local)
System Tools
Event Viewer
Shared Folders
Performance Logs and A
Device Manager
Storage
Removable Storage
Disk Defragmenter
Disk Management
Services and Applications
Disk 0
Basic
111.79 GB
Online
(C:)
51.76 GB NTFS
Healthy (System)
60.03 GB
Unallocated
New Partition...
Properties
Help
CD-ROM 0
DVD
2.50 GB
Online
LRMCFRE_EN_DVD (D:)
2.50 GB UDF
Healthy
■ Unallocated ■ Primary partition

Volume	Layout	Type	File System	Status	Capacity	Free Space	%
(C:)	Partition	Basic	NTFS	Healthy (System)	51.76 GB	35.30 GB	68
LRMCFRE_EN_DVD (D:)	Partition	Basic	UDF	Healthy	2.50 GB	0 MB	0

1 Existing Windows XP installation

2 Unallocated space to be used for Vista

3 Starting New Partition Wizard

Figure 3.7

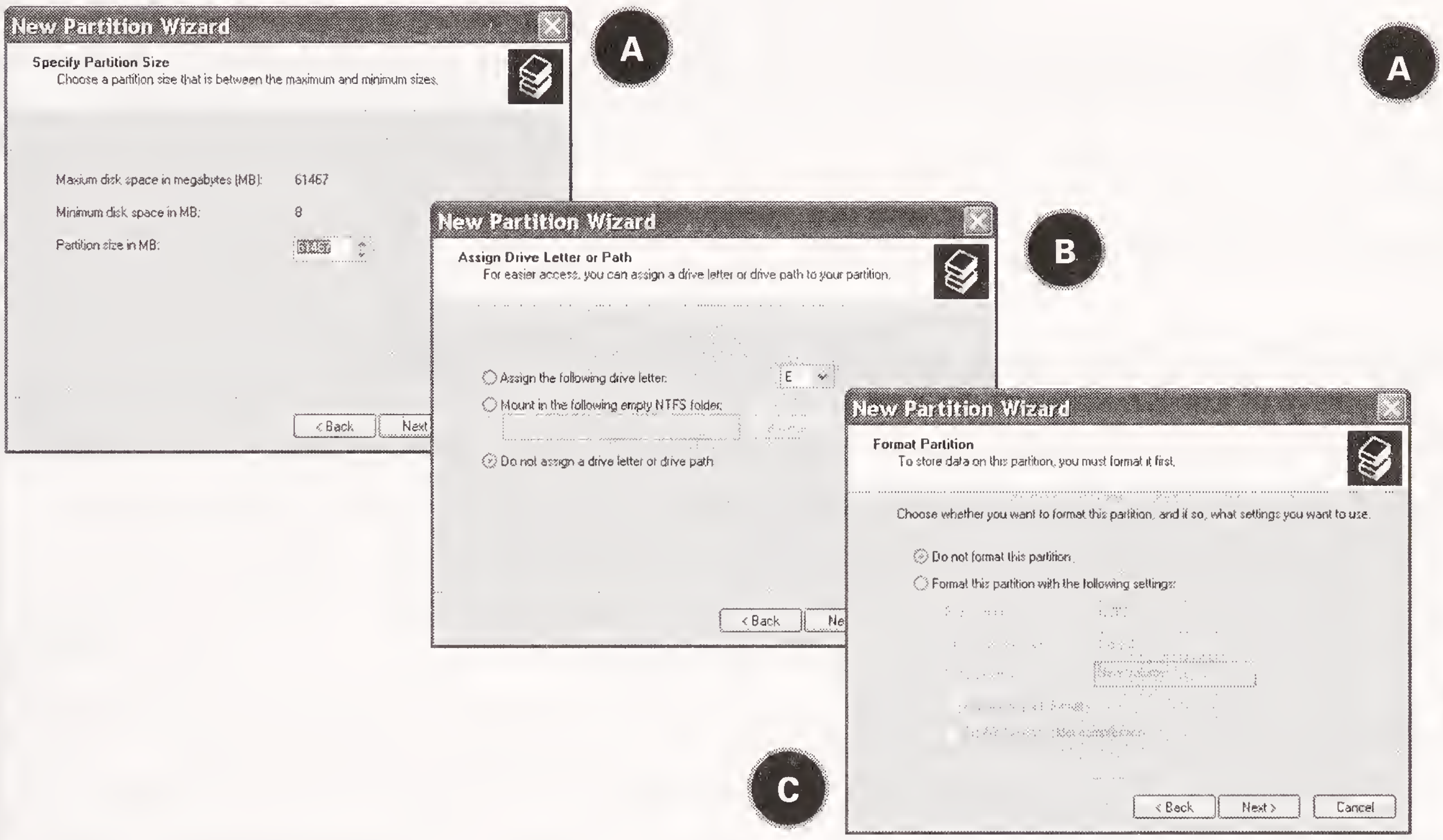
Starting the New Partition Wizard in Windows XP's Disk Management.

Click Next from the opening screen of the New Partition Wizard. On the Select Partition Type dialog, accept the default (Primary partition) and click Next. Because you must use a primary partition to start a system, do not select Extended Partition from this dialog.

If you want to reserve a portion of the drive for another operating system or other use, enter the desired partition size in the Specify Partition Size dialog shown in Figure 3.8 A and click Next. Otherwise, to use the entire unpartitioned area of the hard disk for Vista, click Next.

Because Windows XP is both nosy and possessive, if it detects your new drive partition it will want to make its own use of it as a source for a paging file. To prevent Windows XP from seeing the drive, select Do Not Assign a Drive Letter or Path on the Assign Drive Letter or Path dialog shown in Figure 3.8 B and click Next to continue.

Because we want Vista to format the drive during its own installation, select Do Not Format This Partition and click Next to continue (see Figure 3.8 C).



Specify Partition Size
Choose a partition size that is between the maximum and minimum sizes.

Maxium disk space in megabytes (MB): 61467
Minimum disk space in MB: 8
Partition size in MB: 61467

Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.

○ Assign the following drive letter: E
○ Mount in the following empty NTFS folder:
● Do not assign a drive letter or drive path

Format Partition
To store data on this partition, you must format it first.

Choose whether you want to format this partition, and if so, what settings you want to use.

● Do not format this partition
○ Format this partition with the following settings:

A Using the entire unpartitioned area for a new primary partition for Vista

B Don't assign a drive letter or path to this partition

C Skip formatting, and save yourself time

Figure 3.8

Reviewing the settings before completing the New Partition Wizard.

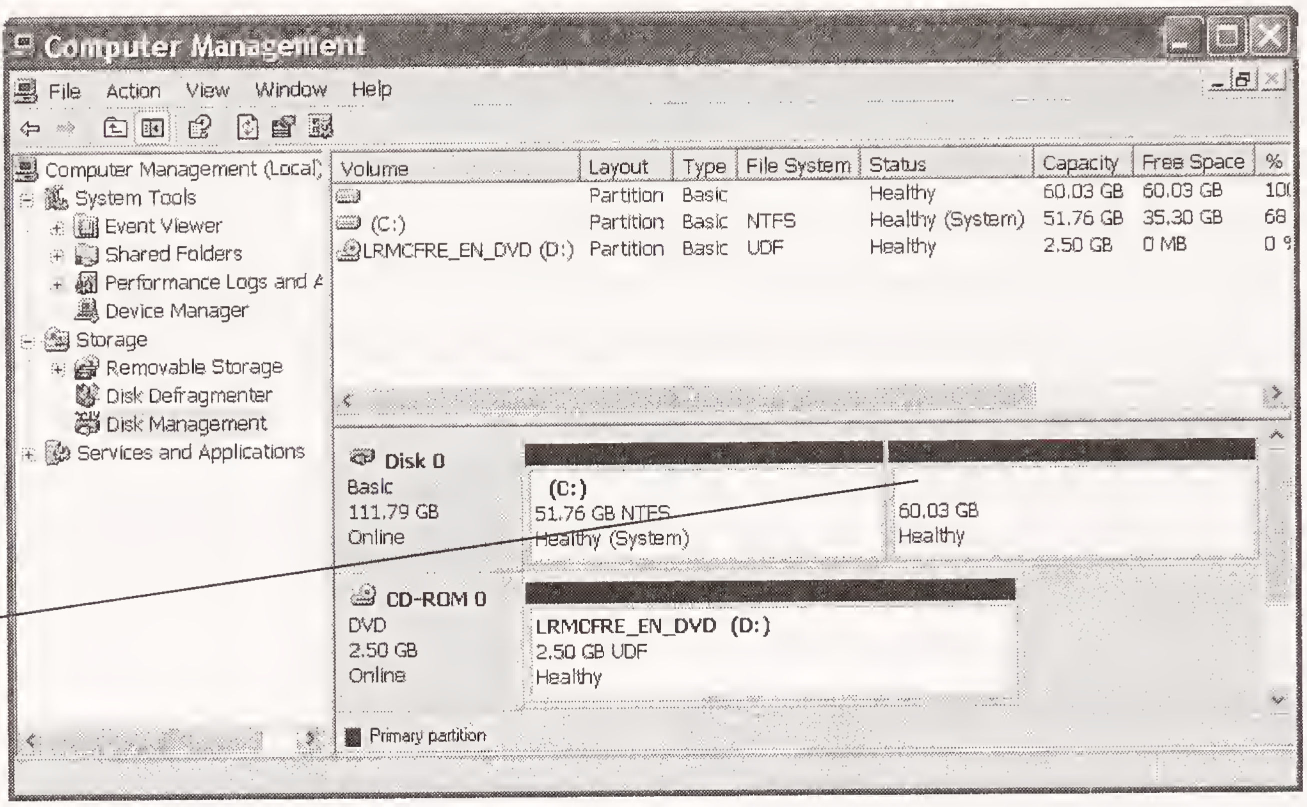
Review your settings on the Completing the New Partition Wizard dialog, and click Finish if you are satisfied. Click Back to make any changes needed. At this point, the Computer Management app displays your new partition (see Figure 3.9).

Close Computer Management. Now, you're ready to install Vista to the newly prepared primary partition.

If your hard disk has been entirely allocated to one or more disk drives, but much of the allocated space on the drive is not occupied by files, you can use a third-party disk-partitioning program to reduce the size of your Windows XP partition to make room for Windows Vista.

TIP

To find out how much of your system (C:) drive is not in use, open My Computer, right-click C: drive and select Properties. If you have 100GB or more free space on your C: drive, you can shrink it by 50GB or so to make room for a dual-boot Vista installation.


Computer Management
File Action View Window Help
Computer Management (Local)
System Tools
Event Viewer
Shared Folders
Performance Logs and A
Device Manager
Storage
Removable Storage
Disk Defragmenter
Disk Management
Services and Applications
Primary partition

Volume	Layout	Type	File System	Status	Capacity	Free Space	%
	Partition	Basic		Healthy	60.03 GB	60.03 GB	10
(C:)	Partition	Basic	NTFS	Healthy (System)	51.76 GB	35.30 GB	68
LRMCFRE_EN_DVD (D:)	Partition	Basic	UDF	Healthy	2.50 GB	0 MB	0

Disk 0
Basic
111.79 GB
Online

(C:)
51.76 GB NTFS
Healthy (System)

60.03 GB
Healthy

CD-ROM 0
DVD
2.50 GB
Online

LRMCFRE_EN_DVD (D:)
2.50 GB UDF
Healthy

① New, unformatted primary partition

Figure 3.9

The new partition is ready for Vista.

Installing Vista as a Dual-Boot Option

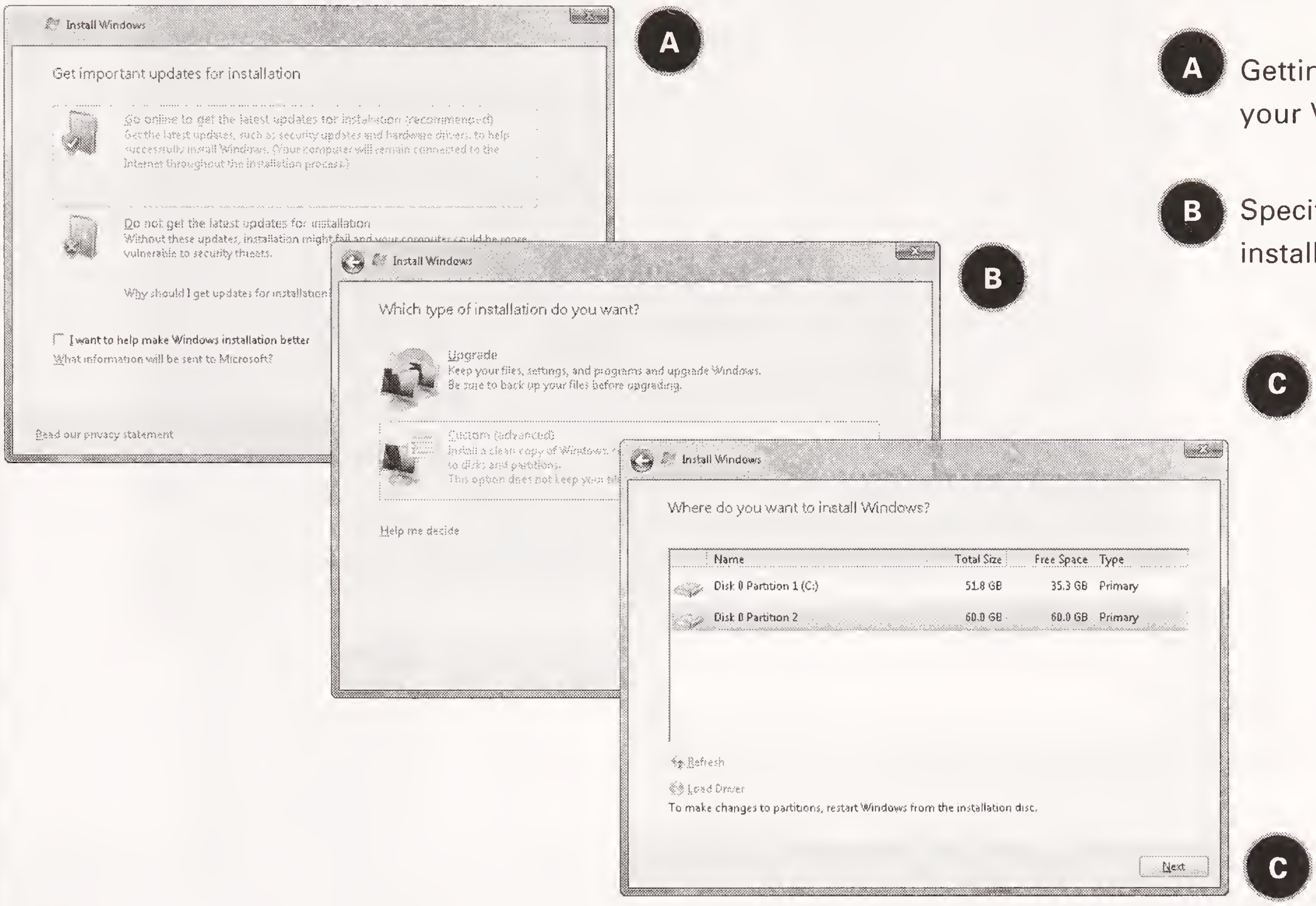
To start a dual-boot installation, start Windows normally. After your system boots, insert the Windows Vista DVD, and click Install Now when prompted. If you have disabled AutoPlay for your DVD drive, you can activate Vista's setup program in Windows Explorer. Simply locate and double-click the Setup icon in your DVD drive to get started.

The Starting Installation screen appears briefly, followed by the Get Important Updates for Installation dialog shown in Figure 3.10 A. Take Microsoft's advice and go online to make sure you have the latest drivers and security updates for Vista. Keep in mind that your system must stay connected to the Internet the entire time if you select this option, so if you're still using dial-up, tell your friends to call you on your cell phone until you're finished.

An animated progress bar appears while updates are being downloaded. Next, enter the product key and accept the terms as discussed previously in the section "Running a Clean Install," p. 42, this chapter.

When asked which type of installation you want to use, select Custom (advanced) as in Figure 3.10 B.

Select the disk partition you created with Disk Management. Because you did not format it, it is not identified by a drive letter (see Figure 3.10 C).



Install Windows

Get important updates for installation

Go online to get the latest updates for installation (recommended)
Get the latest updates, such as security updates and hardware drivers, to help successfully install Windows. (Your computer will remain connected to the Internet throughout the installation process.)

Do not get the latest updates for installation
Without these updates, installation might fail and your computer could be more vulnerable to security threats.

Why should I get updates for installation?

☐ I want to help make Windows installation better
What information will be sent to Microsoft?

Read our privacy statement

Install Windows

Which type of installation do you want?

Upgrade
Keep your files, settings, and programs and upgrade Windows.
Be sure to back up your files before upgrading.

Custom (advanced)
Install a clean copy of Windows,
to disks and partitions.
This option does not keep your fil

Help me decide

Install Windows

Where do you want to install Windows?

Name	Total Size	Free Space	Type
Disk 0 Partition 1 (C:)	51.8 GB	35.3 GB	Primary
Disk 0 Partition 2	60.0 GB	60.0 GB	Primary

To make changes to partitions, restart Windows from the installation disc.

A Getting updates for your Vista installation

B Specifying a Custom installation

C Selecting the unformatted (no drive letter) assigned partition for Vista installation

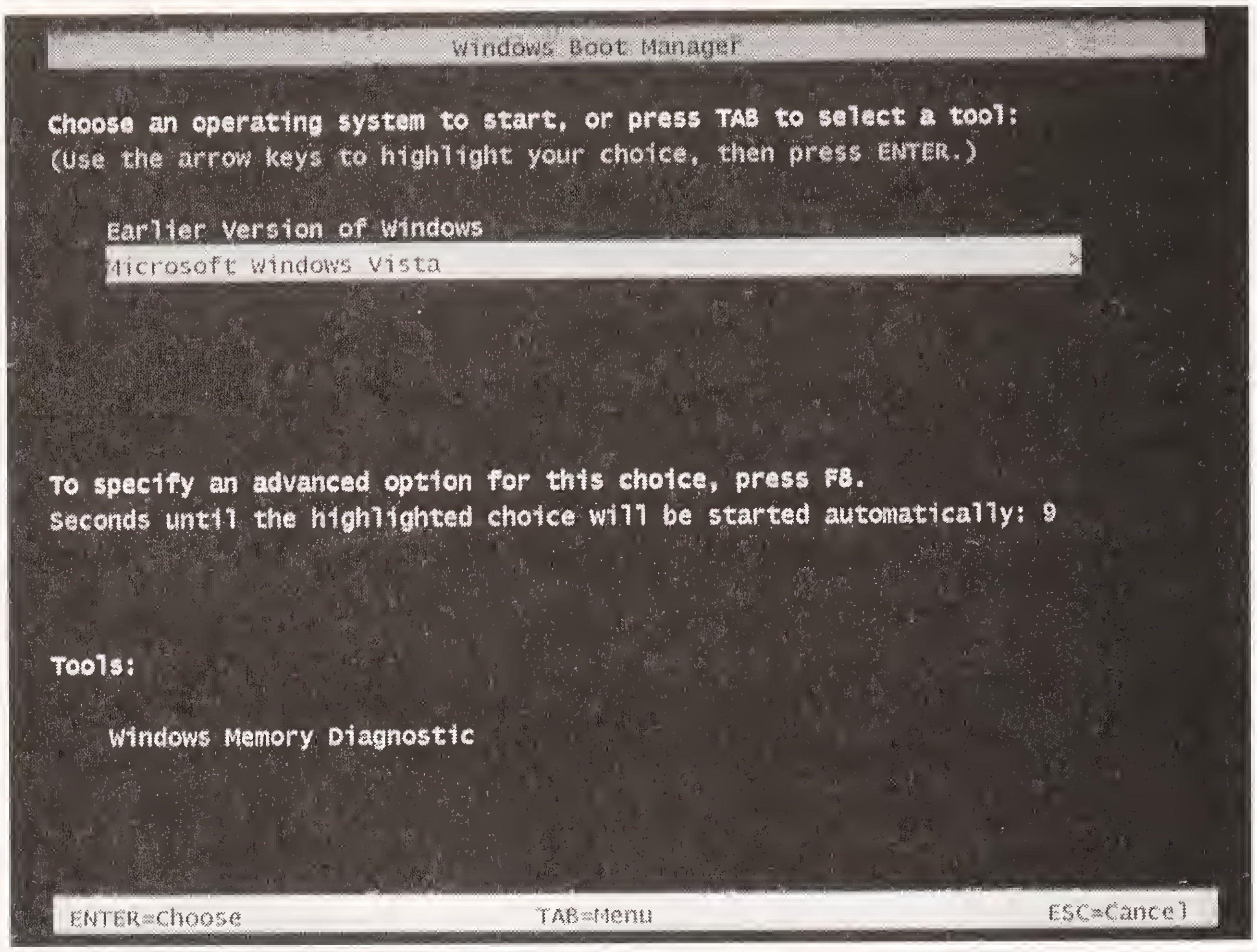
Figure 3.10

Preparing to install Windows Vista in a dual-boot configuration.

When you perform a dual-boot installation, you are prompted to select the country or region, time and currency, and keyboard layout just before entering the username and password, rather than at the beginning of the process as you do with a standard clean install. After selecting these options, the remainder of the process is the same as in a clean install.

⇨ For more information on completing the installation process, see "Configuring Vista," p. 48, this chapter.

When you restart your system, you will see a dual-boot menu similar to the one shown in Figure 3.11. Select Microsoft Windows to run Vista, or Earlier Version of Windows ... to load your previous version of Windows.



```
                         Windows Boot Manager

Choose an operating system to start, or press TAB to select a tool:
(Use the arrow keys to highlight your choice, then press ENTER.)

    Earlier Version of Windows
    Microsoft Windows Vista                                        >



To specify an advanced option for this choice, press F8.
Seconds until the highlighted choice will be started automatically: 9


Tools:

    Windows Memory Diagnostic


ENTER=Choose                 TAB=Menu                       ESC=Cancel
```

Figure 3.11

Vista's dual-boot menu.

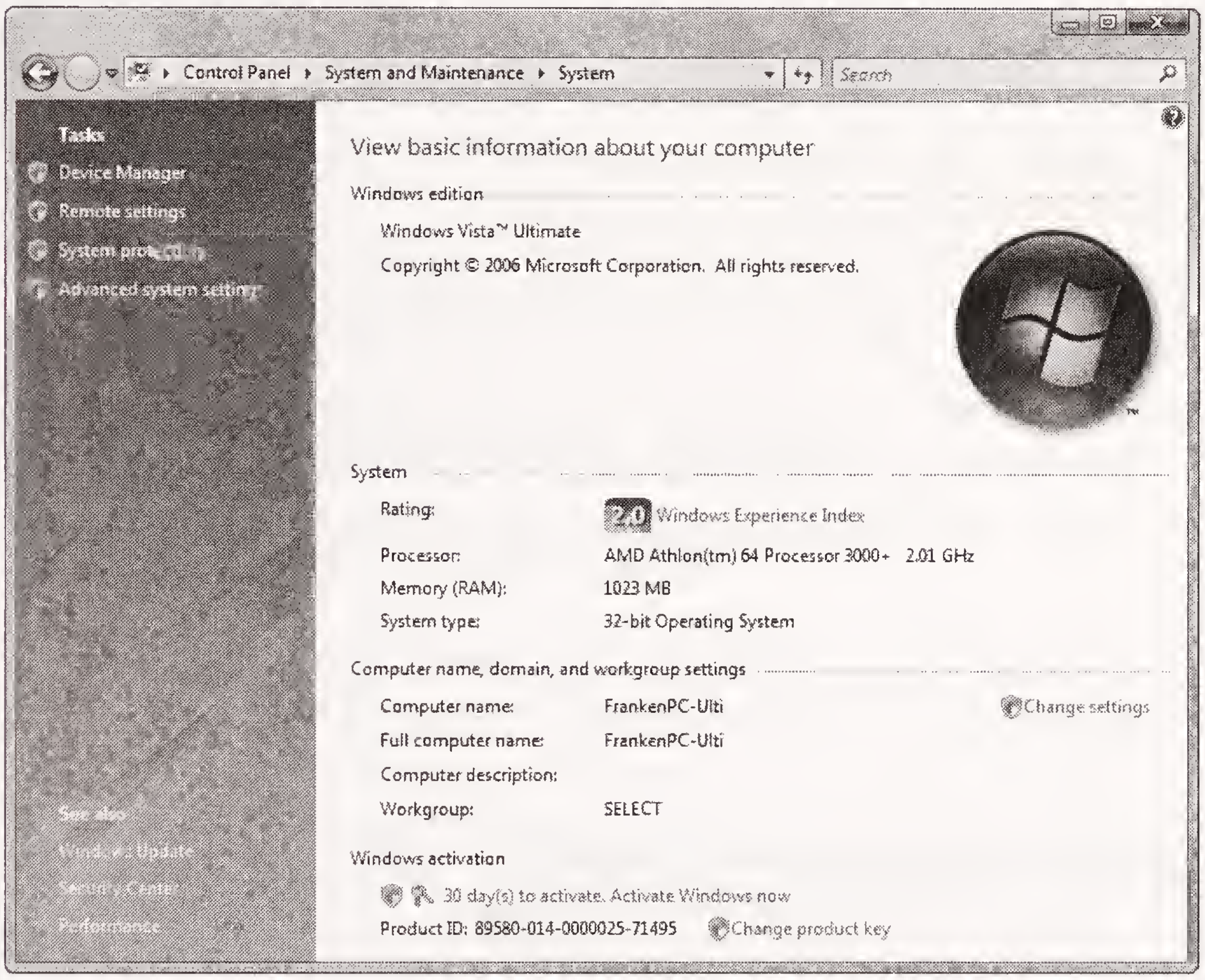
Dual-Booting Windows Vista with Linux

If you're a penguin fan (Linux, not Pittsburgh, for you NHL fans), yes, you can dual-boot Windows Vista and Linux, or even create a triple-boot scenario (Windows XP or other versions, Windows Vista, and Linux). The preferred method for creating a dual-boot Vista/Linux installation is to create a bootable (primary) partition with enough room for Vista and install Vista first. For example, with a 250GB hard disk, you could set up 150GB for Vista and leave the remainder unpartitioned. When you install Linux, it is installed into the unpartitioned disk space. The Linux **grub** boot loader needs to be edited to enable you to select Windows Vista or Linux. Similarly, with a triple-boot configuration, you install Windows XP (or an older version of Windows) first, then Windows Vista, then Linux. To get all the (not-so) gory details, see "How to: Dual-boot Windows Vista and Linux" at http://www.pro-networks.org/forum/about78184.html.

In case you were wondering, you can use a Vista installation protected by BitLocker for dual-booting. However, you can only access the files on the Vista system drive when you boot Vista and provide the correct credentials. For more information about BitLocker and dual-boot security issues, see "Schneier on Security: Microsoft's BitLocker" at http://www.schneier.com/blog/archives/2006/05/bitlocker.html.

Seeing System Details

If you built your Vista PC from scratch, you might already know every component under the hood, but if you're running Vista on a prebuilt box, you might want to learn more about the hardware that's running your Vista installation, and about the installation itself. Open the Start menu, right click Computer and select Properties, to bring up the System window (see Figure 3.12).


Control Panel ▸ System and Maintenance ▸ System
Search
Tasks
Device Manager
Remote settings
System protection
Advanced system settings
See also
Windows Update
Security Center
Performance
Change settings
Change product key

View basic information about your computer

Windows edition

Windows Vista™ Ultimate
Copyright © 2006 Microsoft Corporation. All rights reserved.

System

Rating: 2.0 Windows Experience Index
Processor: AMD Athlon(tm) 64 Processor 3000+ 2.01 GHz
Memory (RAM): 1023 MB
System type: 32-bit Operating System

Computer name, domain, and workgroup settings

Computer name: FrankenPC-Ulti
Full computer name: FrankenPC-Ulti
Computer description:
Workgroup: SELECT

Windows activation

30 day(s) to activate. Activate Windows now
Product ID: 89580-014-0000025-71495

Figure 3.12

The Vista System properties sheet.

Note that Vista's properties sheets no longer use the multitabbed interface familiar from Windows XP and earlier versions. Instead, you scroll through the information and select other options from the navigation pane at left. The System properties sheet's basic information page has the following sections:

- Windows Edition—Displays the Vista edition in use.
- System—Displays the processor model, current clock speed, memory available to Vista, and operating system type (32-bit or 64-bit). Click the Windows Experience Index link to see the details of the performance rating for this system.

- Computer Name, Domain, and Workgroup Settings—Displays network information. Click Change Settings to change any or all this information.
- Windows Activation—Displays the activation status and product ID, and provides options for activating Windows and changing the product ID.

All the tasks in the navigation pane of the System properties window and some other items listed display a Windows security shield. This icon indicates that the item is protected by User Account Control (UAC), a new security feature in Windows Vista. If you are an administrator and you click on a UAC-protected feature, a pop-up window prompts you to click Continue or Cancel. Click Continue to perform the task or item you selected, or Cancel if you decide not to continue.

If you are the only user on a system, UAC might seem like a needless nag (you can disable UAC with the System Configuration program MSConfig). However, UAC protects your system from unauthorized changes by standard users. Standard users who attempt to run a UAC-protected task must provide the user name and password of an administrator, or the task will be canceled.

For more information about using System Configuration, see "System Configuration (MSConfig)," Chapter 15, p. 367.

Activating Vista

Activation is designed to assure that you have a genuine copy of Windows Vista, and enables you to get updates and, for Vista Ultimate users, Vista Ultimate Extras. If you didn't activate Vista when you installed it, use the System properties sheet's Windows activation button to activate it. When you click the button, a progress dialog is displayed while Vista "phones home" to Mommy Microsoft for permission to keep running. After activation, the activation countdown shown in Figure 3.12 is replaced by a "Windows is activated" message. During activation, the product identification number (PID) for your installation is transmitted to Microsoft, along with your system's IP address. If Windows Vista can't connect to the activation server, you'll be prompted to try other options, such as calling in via phone.

You have 30 days to activate Windows Vista after you install it. If you're not absolutely sure you want to keep Vista on this computer (for example, if the processor is not really fast enough to run Windows Vista), don't activate it until you're sure. However, keep in mind that Windows Vista will stop working after 30 days if it isn't activated, or after three days if you make significant changes to your system hardware. To find out how much time you have before activation, use the System properties sheet.

If you miss the deadline for activation, an Activate Windows Now error message appears. Click it to activate Windows Vista. If you need to provide the PID manually, you can click Help, About in Internet Explorer 7 to see the PID. For more information about activating Windows Vista after the activation period has expired, go to http://support.microsoft.com/kb/925616.

For more information about the System properties sheet, see "System," Chapter 6, p. 125.

Transferring Settings with Windows Easy Transfer

Windows Vista includes Windows Easy Transfer, a transfer utility that replaces the Files and Settings Transfer Wizard provided with Windows XP. Windows Easy Transfer can transfer files and settings, including documents, emails, and favorites from Windows XP or another Vista system to a Vista system. Windows Easy Transfer can also transfer files, but not settings, from a Windows 2000 system to a Windows Vista system.

To start the transfer process from another system, you have two choices:

- Insert the Windows Vista DVD after the system starts, and select "Transfer Files and Settings from Another Computer."
- Start the Windows Easy Transfer process on your Windows Vista system and set up a USB flash memory drive or a CD-R/RW disc with the Windows Easy Transfer program.

If you have a Windows Vista DVD, I recommend the first option. However, if you are using a preinstalled version of Windows Vista, you may need to use the second option unless a Windows Easy Transfer CD is provided for you.

WARNING

Windows Easy Transfer is designed to transfer files and settings from your old system to your new system. Guess what? If you don't install your existing applications before running Windows Easy Transfer, it won't be able to configure your programs with the settings brought over from your old system!

Fortunately, Microsoft is making it easier to install those applications with the free Windows Easy Transfer Companion download. This program transfers installed applications from your old XP box to your new box. For details, see www.microsoft.com.

To start the process of collecting files from your old system, use one of the following methods:

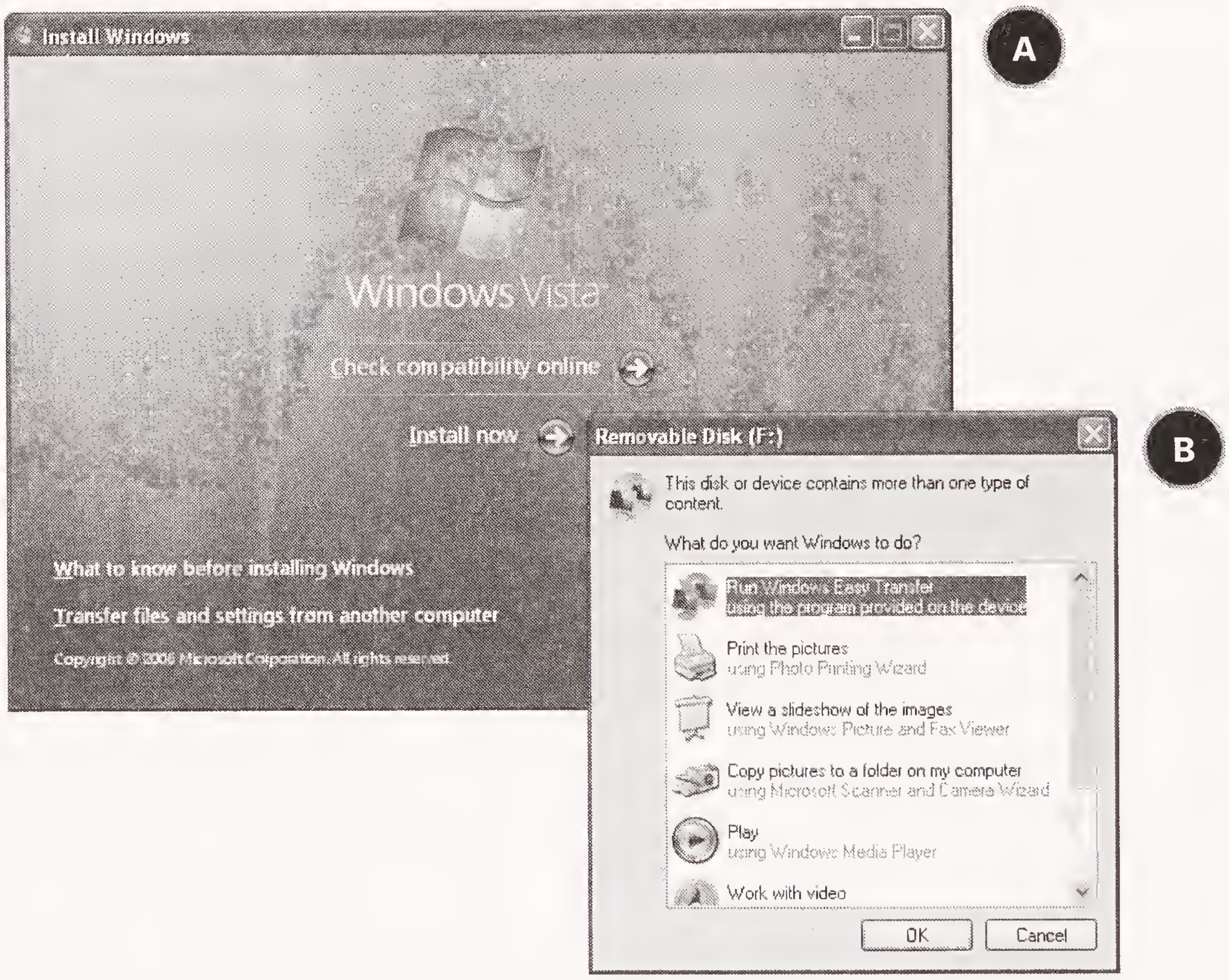
- Insert the Windows Vista DVD into the system after starting it, and select Transfer Files and Settings from Another Computer when the opening Install Windows dialog appears (see Figure 3.13 A).
- If you installed the Windows Easy Transfer program to a CD or a USB flash memory drive and are using Windows XP on your old system, insert the disc or drive and select Run Windows Easy Transfer from the AutoPlay menu for the media (see Figure 3.13 B).
- Windows 2000 does not support AutoPlay. With Windows 2000, or if AutoPlay does not work with Windows XP, use My Computer or Windows Explorer to open the drive containing Windows Easy Transfer, navigate to the MigWiz folder, and open the migwiz program.

TIP

The Close Programs feature in Windows Easy Transfer doesn't work well if some open programs have unsaved data. To avoid problems, close running programs before starting Windows Easy Transfer. You can also download Windows Easy Transfer from www.microsoft.com.

A From the Windows Vista installation DVD

B From the AutoPlay menu


Install Windows
Windows Vista
Check compatibility online
Install now
What to know before installing Windows
Transfer files and settings from another computer
Copyright © 2006 Microsoft Corporation. All rights reserved.
Removable Disk (F:)
Run Windows Easy Transfer using the program provided on the device
Print the pictures using Photo Printing Wizard
View a slideshow of the images using Windows Picture and Fax Viewer
Copy pictures to a folder on my computer using Microsoft Scanner and Camera Wizard
Play using Windows Media Player
Work with video
OK
Cancel
A
B

This disk or device contains more than one type of content.

What do you want Windows to do?

Figure 3.13

Starting Windows Easy Transfer

The Windows Easy Transfer opening dialog appears. Click Next to continue.

Windows Easy Transfer cannot run if any other programs are running. If other programs are running, the Close Programs dialog appears. Click Close All to close the programs listed.

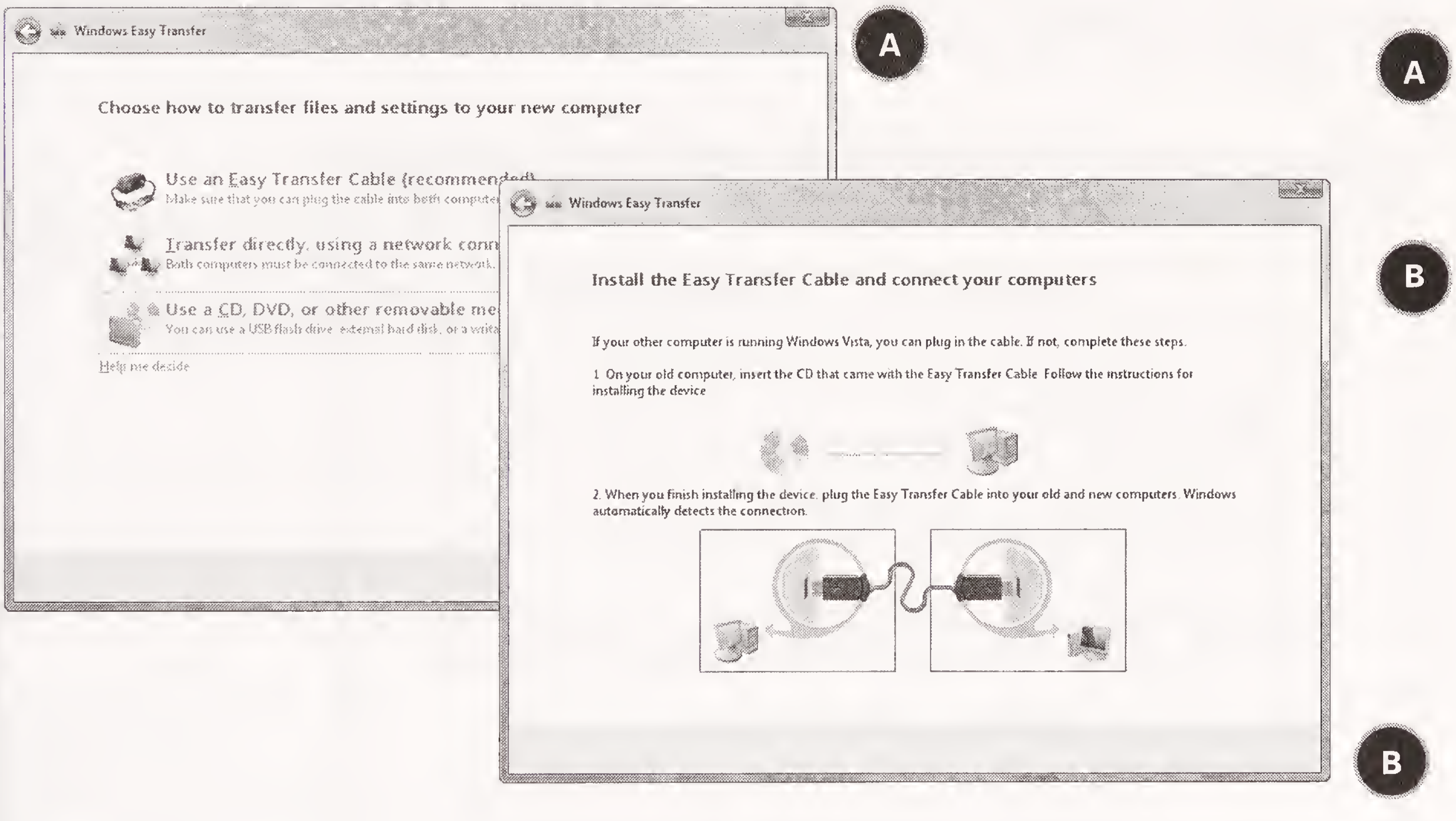
Selecting a Transfer Method

Next, Windows Easy Transfer asks you to select the method you prefer to use to transfer data to your new Windows installation. You can use a USB Easy Transfer Cable, a network connection, or CD or other removable media, including external hard disks or USB flash drives (see Figure 3.14 A). The next dialogs you see depend on the options you select.

If you select the USB Easy Transfer Cable in Figure 3.14 A, the next dialog you see shows you how to connect both systems via the cable (see Figure 3.14 B). After the connection is made, you will select the items to transfer as shown in Figure 3.17.

WARNING

Although Windows Easy Transfer supports both CD and DVD media, you can't write to DVD media if you are transferring from Windows XP, thanks to Windows XP's lame-o CD writing wizard. You can use DVD media if you are transferring files and settings from one Windows Vista system to another.



Choose how to transfer files and settings to your new computer

Use an Easy Transfer Cable (recommended)
Make sure that you can plug the cable into both compute

Transfer directly, using a network conn
Both computers must be connected to the same network.

Use a CD, DVD, or other removable me
You can use a USB flash drive, external hard disk, or a writa

Install the Easy Transfer Cable and connect your computers

If your other computer is running Windows Vista, you can plug in the cable. If not, complete these steps.

1 On your old computer, insert the CD that came with the Easy Transfer Cable Follow the instructions for installing the device

2. When you finish installing the device. plug the Easy Transfer Cable into your old and new computers. Windows automatically detects the connection.

A Selecting the transfer method

B Setting up the computer for Easy Transfer via USB

Figure 3.14

Selecting a transfer method

Microsoft recommends the Easy Transfer Cable, but that makes sense only if you're transferring data between two separate systems (instead of from a Windows XP to a Windows Vista installation on the same hardware) and if you already have the cable (some systems with preinstalled Windows Vista may ship with the cable) or you don't mind spending $30–40 US for a cable you'll probably use only a few times.

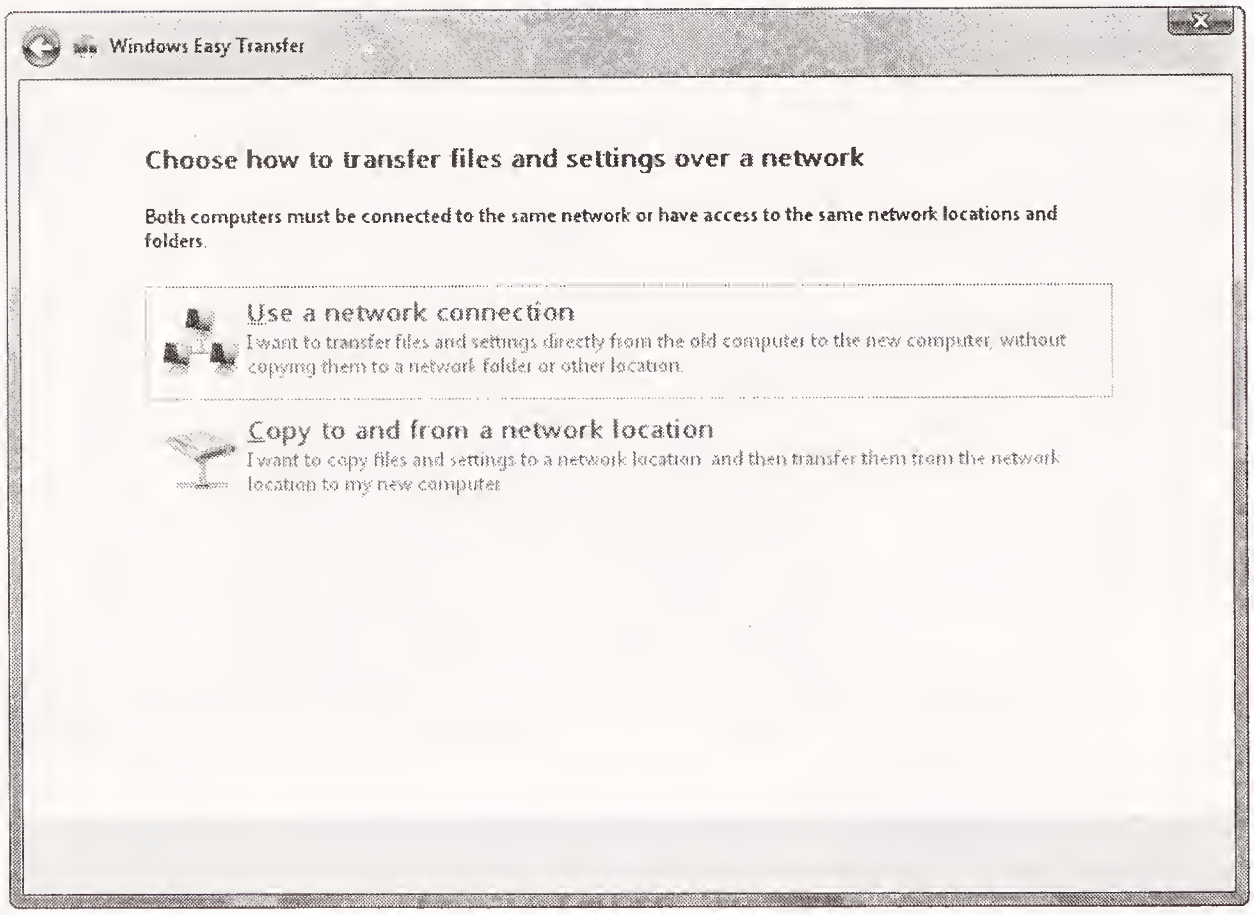
If you select the Transfer Directly Using a Network Connection option in Figure 3.14 A, the next dialog asks if you want to use a network connection for a direct transfer or copy files to and from a network connection (Figure 3.15). Choose Use a Network Connection (direct transfer) if you are transferring items from one computer to another and both are on the network. I recommend using a wired Ethernet connection rather than wireless (whenever possible) to make the transfer faster.

If you choose the direct transfer option in Figure 3.15, you will be asked if you have a Windows Easy Transfer key (a special alphanumeric code used to protect the transfer process). Because you are starting the transfer process, select No, I need a key. On the next screen, a code is provided. Write down the key, go to the new computer, and start Windows Easy Transfer. After Windows Easy Transfer is running on the new computer, return to the old computer and select what you want to transfer.

NOTE

If you want to get an Easy Transfer cable, they're available from the following vendors:

- BAFO Technologies (BF7311)—www.bafo.com
- Belkin (F5U258)—www.belkin.com



Choose how to transfer files and settings over a network

Both computers must be connected to the same network or have access to the same network locations and folders.

Use a network connection
I want to transfer files and settings directly from the old computer to the new computer, without copying them to a network folder or other location.

Copy to and from a network location
I want to copy files and settings to a network location and then transfer them from the network location to my new computer.

Figure 3.15

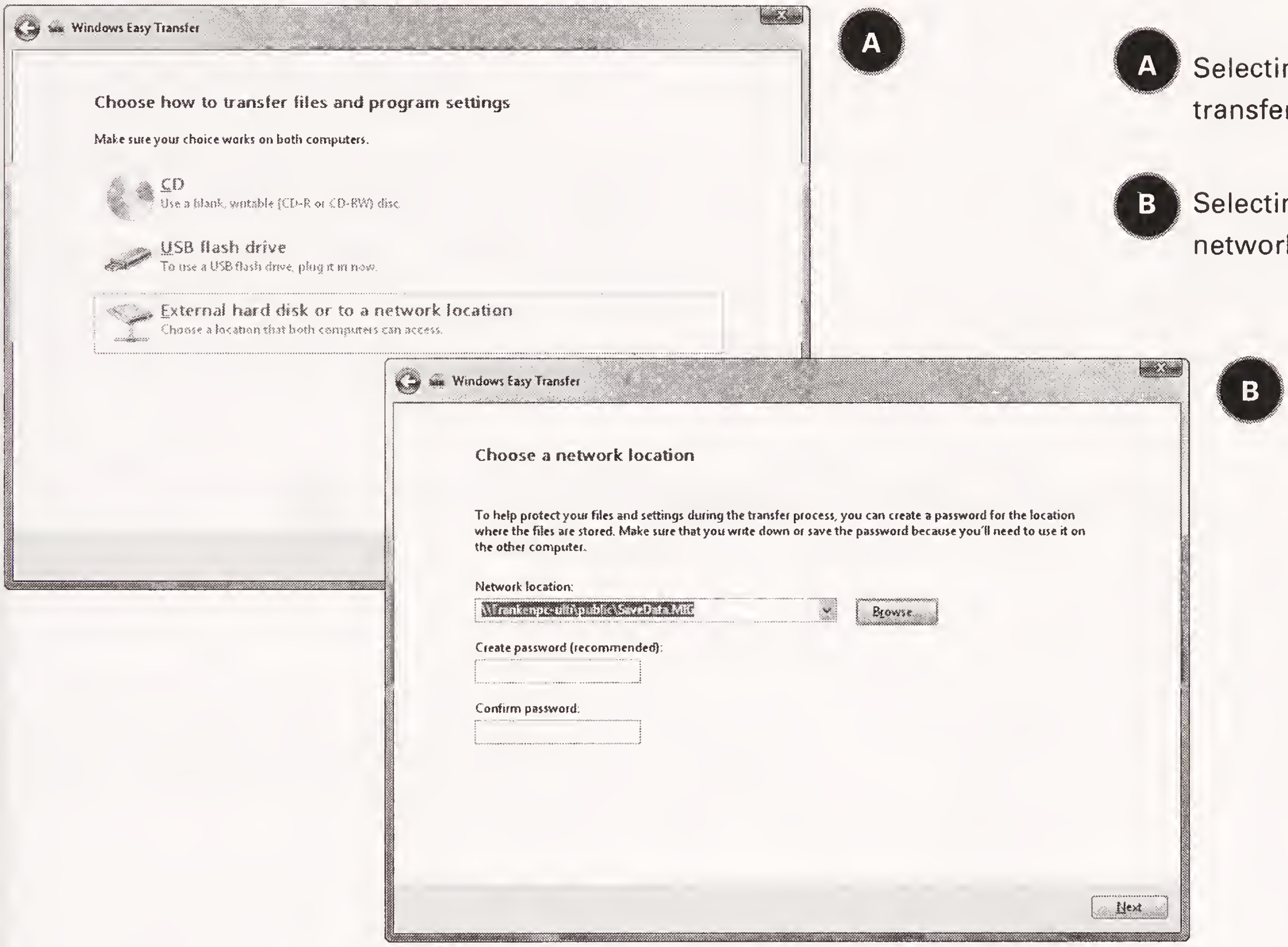
Setting up a direct network transfer

If you select the option to use CD or removable media in Figure 3.14 A, the next dialog asks whether you want to use CD media, a USB flash drive, or an external hard disk or network location that both systems can access (see Figure 3.16 A).

If you select an external hard disk or network location, the next dialog is used to browse to the hard disk or network location (see Figure 3.16 B). Click Next after specifying the location. Note that the name of the Easy Transfer Wizard creates for your data and settings is SaveData.MIG, and you can assign a password to protect the transferred data from unauthorized use.

TIP

If you decide to use an external hard disk, make sure it is plugged in *before* you attempt to browse to it.



Choose how to transfer files and program settings

Make sure your choice works on both computers.

CD
Use a blank, writable (CD-R or CD-RW) disc.

USB flash drive
To use a USB flash drive, plug it in now.

External hard disk or to a network location
Choose a location that both computers can access.

Choose a network location

To help protect your files and settings during the transfer process, you can create a password for the location where the files are stored. Make sure that you write down or save the password because you'll need to use it on the other computer.

Network location: \\frankenpc-ulti\public\SaveData.MIG

Create password (recommended):

Confirm password:

A Selecting the transfer type

B Selecting a network share

Figure 3.16

Setting up a transfer to an external hard disk or network share

Transfer to a USB Flash Memory Drive or CD Media

If you select a USB flash memory drive in Figure 3.16 A, you are prompted to insert a USB flash memory drive. If you select CD media, you are prompted to insert a CD-R (recordable) or CD-RW (rewritable) disc. Note that if you are transferring information between Windows Vista systems, you can also use DVD media.

TIP

If you decide to use an external hard disk or USB flash memory drive, keep in mind that it will not be visible to the Easy Transfer Wizard until you close the AutoPlay dialog triggered when the drive is inserted. Press Alt-Tab as needed to move to AutoPlay and close it. You may prefer to connect the drive and close its AutoPlay menu before you start the wizard.

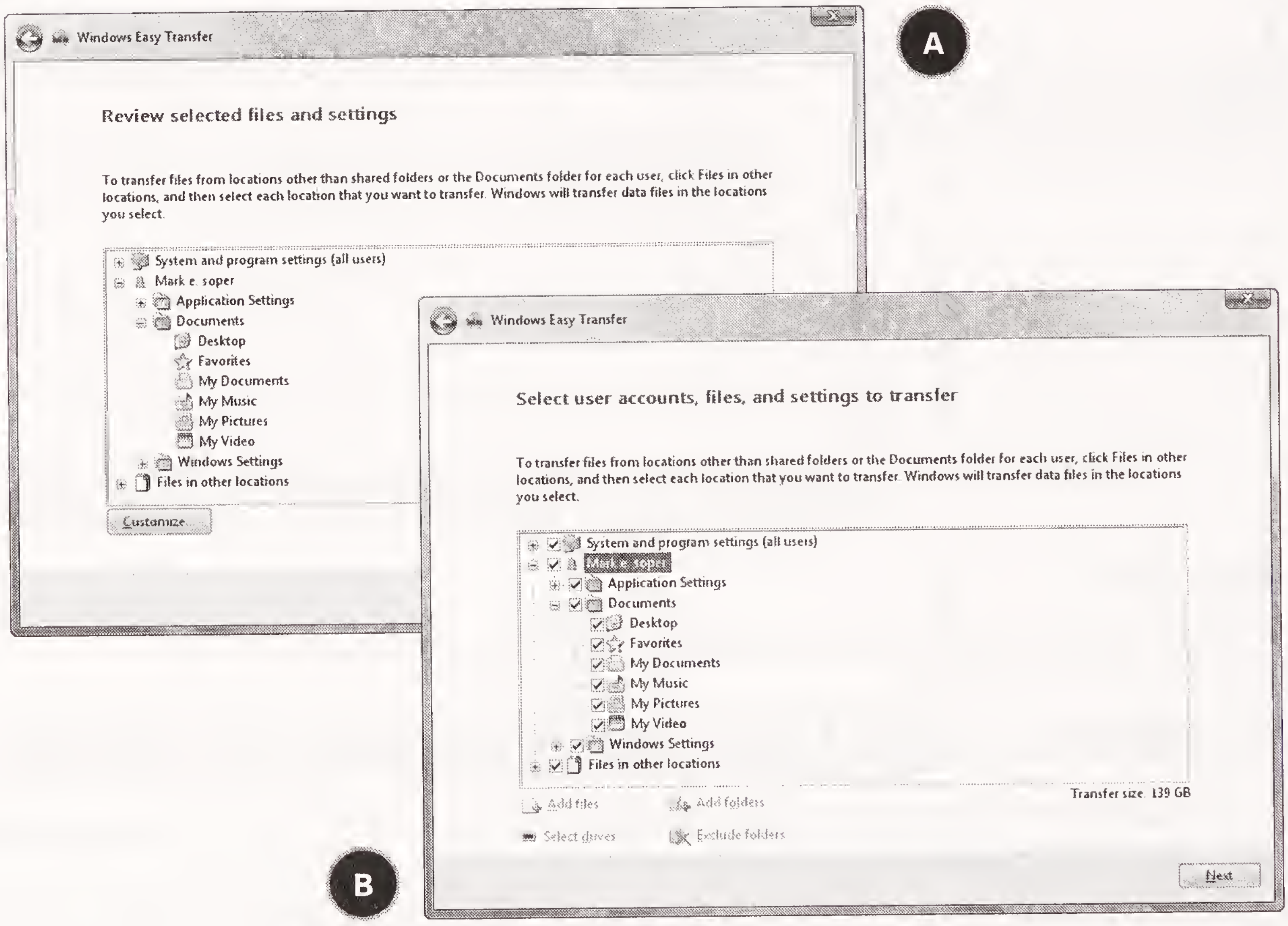
After you select the type of transfer, it's time to select the files and settings you want to transfer.

Collecting Your Existing Files with Windows Easy Transfer

The What Do You Want to Transfer dialog provides three choices:

- All User Accounts, Files, and Settings (default)
- My User Accounts, Files, and Settings
- Advanced Options

If you select either of the first two options, a Review Selected Files and Settings dialog appears (see Figure 3.17 A). Scroll through the settings and click the plus (+) sign next to each item to expand it. If you click Customize from this dialog or if you select Advanced Options you can select additional files, folders or drives or deselect some items (see Figure 3.17 B).



A Reviewing items when All Users or Current User is selected

B Customizing user accounts, files, and settings to transfer

Windows Easy Transfer

Review selected files and settings

To transfer files from locations other than shared folders or the Documents folder for each user, click Files in other locations, and then select each location that you want to transfer. Windows will transfer data files in the locations you select.

- System and program settings (all users)
- Mark e. soper
  - Application Settings
  - Documents
    - Desktop
    - Favorites
    - My Documents
    - My Music
    - My Pictures
    - My Video
  - Windows Settings
- Files in other locations

Windows Easy Transfer

Select user accounts, files, and settings to transfer

To transfer files from locations other than shared folders or the Documents folder for each user, click Files in other locations, and then select each location that you want to transfer. Windows will transfer data files in the locations you select.

- ☑ System and program settings (all users)
- ☑ Mark e. soper
  - ☑ Application Settings
  - ☑ Documents
    - ☑ Desktop
    - ☑ Favorites
    - ☑ My Documents
    - ☑ My Music
    - ☑ My Pictures
    - ☑ My Video
  - ☑ Windows Settings
- ☑ Files in other locations

Transfer size: 139 GB

Figure 3.17

Preparing to transfer items from the old computer.

Table 3.2 provides an overview of the files and settings transferred by Windows Easy Transfer when the standard user account settings (first and second options) are selected. Note that program settings vary with the programs and versions installed.

Table 3.2—Items Transferred by Windows Easy Transfer

Item	Typical Examples
System and Program Settings	Mozilla Firefox Microsoft Office Apple QuickTime Windows Media Player Windows Movie Maker
Shared Folders	Shared Documents Shared Music Shared Pictures Shared Videos
Windows Settings (categories)	Accessibility Additional Options Appearance and Display Communications and Sync Date, Time, Language and Region Hardware Network and Internet Performance and Maintenance Programs Security Sound and Speech Recognition Tablet PC Settings
Files in Other Locations	Varies
User-specific Application Settings	Adobe Reader Mozilla Firefox Microsoft Office QuickTime Player SpyBot! S&D Windows Media Player Windows Movie Maker WordPerfect Office
User-specific Document and Settings Locations	Desktop Favorites My Documents My Music My Pictures My Video Email message store and contacts (Outlook and Outlook Express; may also support other email clients)
User-specific Windows Settings	Accessibility Additional Options Appearance and Display Communications and Sync Date, Time, Language and Region Hardware Network and Internet Performance and Maintenance Programs Security Sound and Speech Recognition Tablet PC Settings

Note that Windows Easy Transfer displays the total space needed to store the transferred information in the lower-right corner of the dialog (see Figure 3.17 B). Be sure to compare this amount to the space available on the target drive or network location. Transfers can require many gigabytes of space.

To begin the transfer process, click Transfer. If you selected the Customize option, click Next, then Transfer. An animated progress bar appears during the transfer process, and each file is listed as it is transferred. If you selected CD or DVD media, be sure to label each disc as it is filled, and have enough media ready to perform the transfer.

Creating a Windows Easy Transfer Disk

If you don't have a Windows Vista DVD or a Windows Easy Transfer CD, you can create a Windows Easy Transfer disk and use it to start Windows Easy Transfer on the old system.

To create a Windows Easy Transfer CD or USB flash memory drive on a Windows Vista system, start Windows Easy Transfer from the Welcome Center, then follow this procedure:

1. Select Start a New Transfer.
2. When asked what computer you're using, select My New Computer.
3. When asked if you have an Easy Transfer cable, select No, Show Me More Options.
4. When asked if you have installed Windows Easy Transfer on your old computer, select No, I Need to Install It Now.
5. Select the media type to use for the transfer program (CD, USB flash drive, external hard disk or network location).
6. Select the drive letter of the media, and click Next. The Windows Easy Transfer software is copied to the media.
7. Select how you will transfer the files: Yes – over the network; No – via CD, DVD or other removable media.
8. If you select No in Step 7, note the instructions provided to copy the Migration Wizard program over to the target system, then click Close.
9. If you select Yes in Step 7, you'll be prompted to configure the Windows Firewall to unblock Windows Easy Transfer. Click Yes.

Transferring Information to Your New Computer

If you are performing a direct transfer (USB or network), you are prompted to select the correct user account on the new computer to match each account you are transferring from the old computer before the transfer takes place. If you are transferring information from a drive letter not present on the new system, you must select a drive to use. After making these selections, the transfer takes place.

To retrieve transferred files and settings from a network folder or from other types of media, start Windows Easy Transfer on the new system and connect or insert the media used for the transfer. This time, when asked whether you want to start or continue a transfer, select Continue a Transfer in Progress. Then select the location where you stored the settings to transfer (network or removable media).

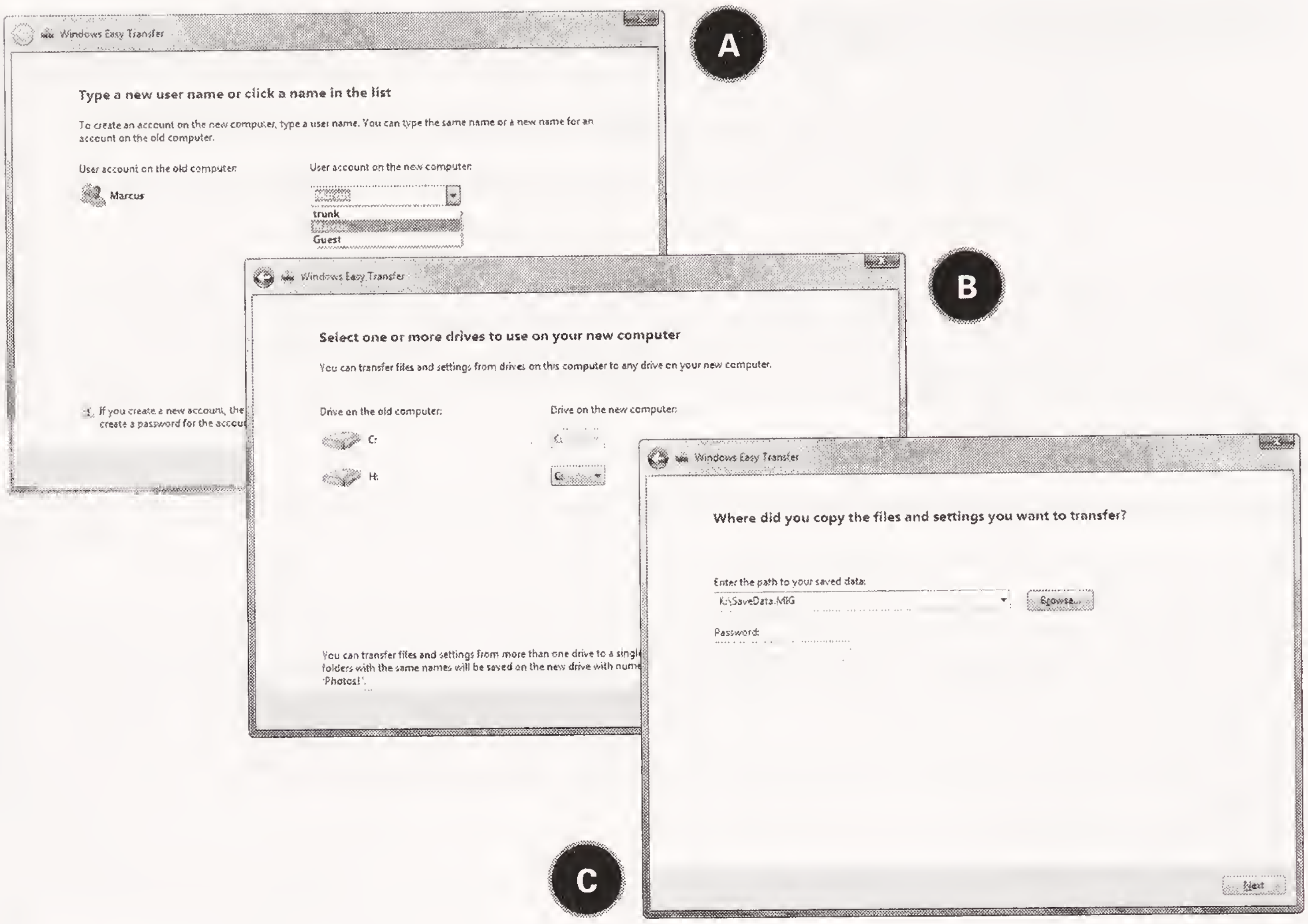
If you selected to transfer from a network, click Yes if prompted to direct the Windows Firewall to unblock Windows Easy Transfer. Enter the Windows Easy Transfer key provided earlier, and click Next. Navigate to the network location containing the SaveData.MIG file and continue.

WARNING

Although Windows Easy Transfer transfers user accounts between computers, it does not transfer the password used by any account. If you have already assigned passwords to the accounts on the new system, they are not changed. If the new system's accounts don't have passwords, the old system's passwords are not used.

If you are not using a network for the transfer, you are prompted to select the media type used for the transfer. If you select a CD, DVD, or flash memory drive, you are prompted to insert the first disc (CD/DVD) or insert the drive and select the correct drive letter before continuing. If you used an external drive, use the Browse button on the Where Did You Copy the Files and Settings You Want to Transfer? dialog to locate the folder in which your data is stored.

When prompted, select the correct user name for each account from the old system (see Figure 3.18 A) and the drive letter to use for files from drives not present on the new system (see Figure 3.18 B). You can review the files and settings to be transferred (see Figure 3.18 C). Click Transfer, and the transfer process begins.



Type a new user name or click a name in the list

To create an account on the new computer, type a user name. You can type the same name or a new name for an account on the old computer.

User account on the old computer: Marcus

User account on the new computer:

If you create a new account, the
create a password for the accou

Select one or more drives to use on your new computer

You can transfer files and settings from drives on this computer to any drive on your new computer.

Drive on the old computer: C: H:

Drive on the new computer: C: C:

You can transfer files and settings from more than one drive to a singl
folders with the same names will be saved on the new drive with nume
'Photos1'.

Where did you copy the files and settings you want to transfer?

Enter the path to your saved data: K:\SaveData.MIG

Password:

A Selecting a media type

B Selecting the USB, CD, or DVD drive containing the migration file

C Selecting the hard disk or network location containing the migration file

Figure 3.18

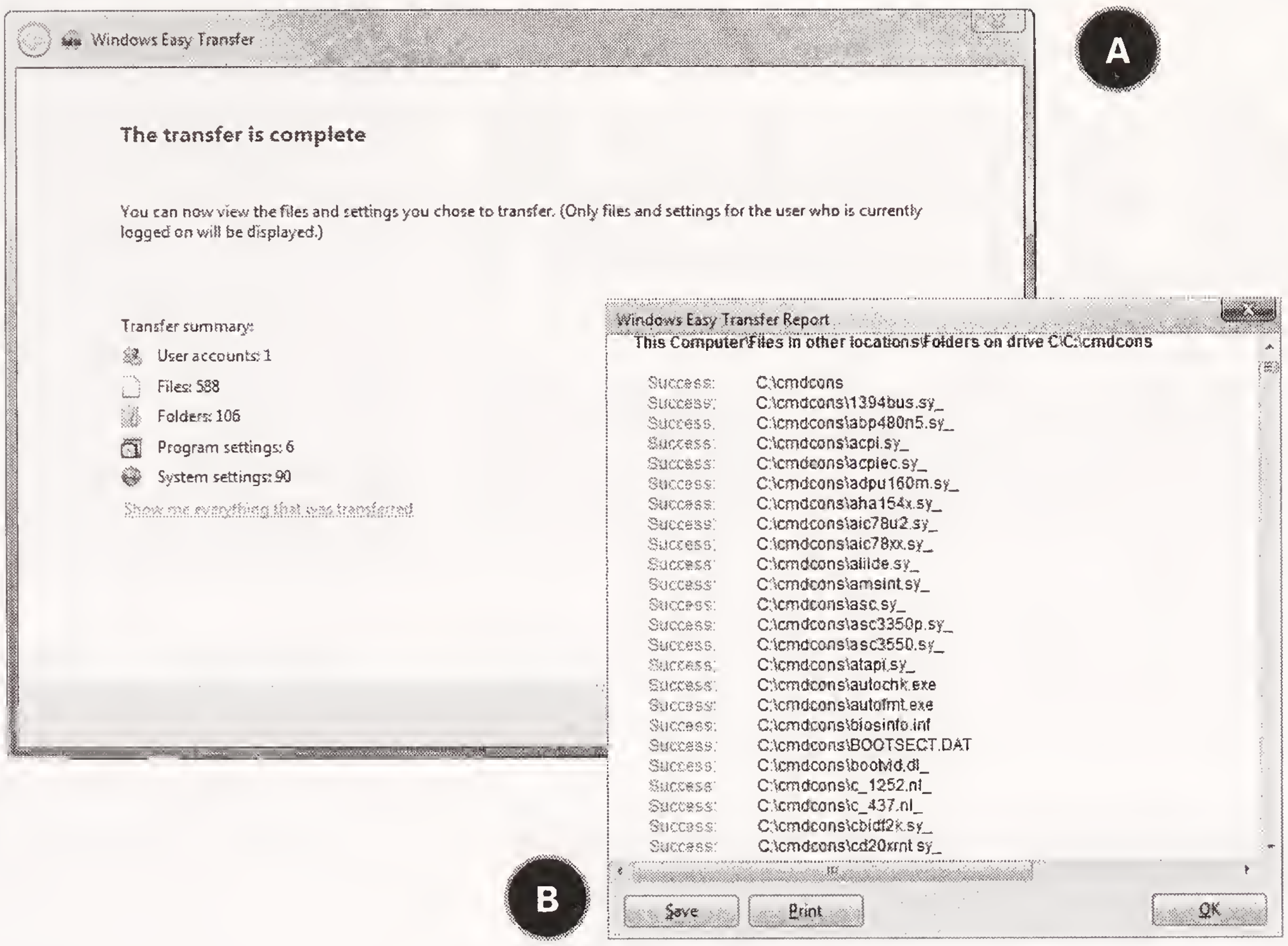
Setting up a removable-media or hard disk transfer to the new computer.

The transfer process then starts. After the transfer process is over, click Close on the Go to Your New Computer... dialog. Follow the appropriate procedures to remove your media or drive and, if necessary, shut down your old system.

On your new computer, a summary similar to the one shown in Figure 3.19 A is displayed. If you don't want to see additional information, click Close. However, if you're curious about the details, click Show Me Everything..., to bring up the Migration Final Report dialog (see Figure 3.19 B).

TIP

Remember, an Administrator can always move user account info (document folders, for example) from the default C:\Users\Username locations to another drive/folder at any time. If you want to move the user accounts to another drive (I prefer to use a separate logical drive letter, usually D:, myself), you can do this after the migration process is complete.



The transfer is complete

You can now view the files and settings you chose to transfer. (Only files and settings for the user who is currently logged on will be displayed.)

Transfer summary:

User accounts: 1
Files: 588
Folders: 106
Program settings: 6
System settings: 90

Show me everything that was transferred

Windows Easy Transfer Report

```
This Computer\Files in other locations\Folders on drive C\C:\cmdcons

Success:    C:\cmdcons
Success:    C:\cmdcons\1394bus.sy_
Success:    C:\cmdcons\abp480n5.sy_
Success:    C:\cmdcons\acpi.sy_
Success:    C:\cmdcons\acpiec.sy_
Success:    C:\cmdcons\adpu160m.sy_
Success:    C:\cmdcons\aha154x.sy_
Success:    C:\cmdcons\aic78u2.sy_
Success:    C:\cmdcons\aic78xx.sy_
Success:    C:\cmdcons\alilde.sy_
Success:    C:\cmdcons\amsint.sy_
Success:    C:\cmdcons\asc.sy_
Success:    C:\cmdcons\asc3350p.sy_
Success:    C:\cmdcons\asc3550.sy_
Success:    C:\cmdcons\atapi.sy_
Success:    C:\cmdcons\autochk.exe
Success:    C:\cmdcons\autofmt.exe
Success:    C:\cmdcons\biosinfo.inf
Success:    C:\cmdcons\BOOTSECT.DAT
Success:    C:\cmdcons\bootvid.dl_
Success:    C:\cmdcons\c_1252.nl_
Success:    C:\cmdcons\c_437.nl_
Success:    C:\cmdcons\cbidf2k.sy_
Success:    C:\cmdcons\cd20xrnt.sy_
```

A An overview of the results

B Viewing the details

Figure 3.19

The end of the transfer process.

If you want to save some trees, click Save to create an HTML (web page) report on disk. Just choose a folder location and filename for the report, and you're set. If you're old-fashioned (or need a printout for the boss), click Print to send the report to an installed printer, or click OK to close the dialog.

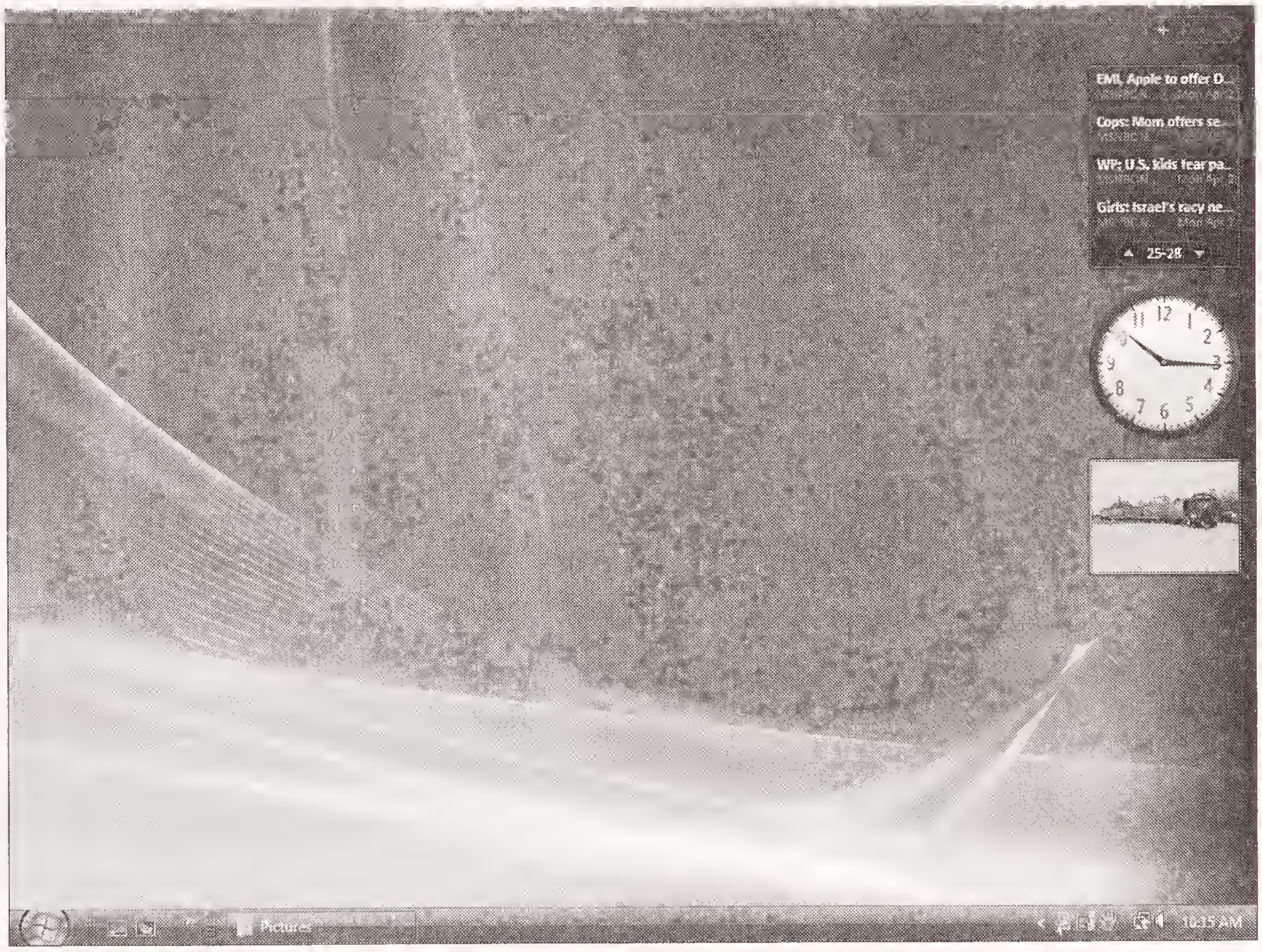
Chapter Four

Mastering the Vista User Interface

IN THIS CHAPTER

- The Vista Desktop—Some Things Borrowed, Some Things New
- Using Gadgets and the Windows Sidebar
- The New and Improved Vista Start Menu
- Customizing the Desktop
- Moving Between Open Programs
- Sleep, Shutdown, and Other Options
- User Interface Best Practices

The Vista Desktop—Some Things Borrowed, Some Things New


EMI, Apple to offer D...
Cops: Mom offers se...
WP: U.S. kids fear pa...
Girls: Israel's racy ne...
25-28
Pictures
10:35 AM

The Windows Vista desktop includes a few familiar items borrowed from Windows XP and older siblings:

- The Notification area is still in the lower right-hand corner.
- The desktop still features a choice of wallpapers, or you can add your own, or use no wallpaper at all.
- The Taskbar still features some quick-launch Quicklaunch icons for Windows Media Player, Show Desktop, and so forth.

However, the Windows Vista desktop also contains plenty of new and unfamiliar features:

- What happened to the Start button?
- Where did the wall clock and the other stuff on the right-hand side of the desktop come from?

To discover what happened to the Windows desktop we've been using for more than a decade, rèad on.

Using Gadgets and the Windows Sidebar

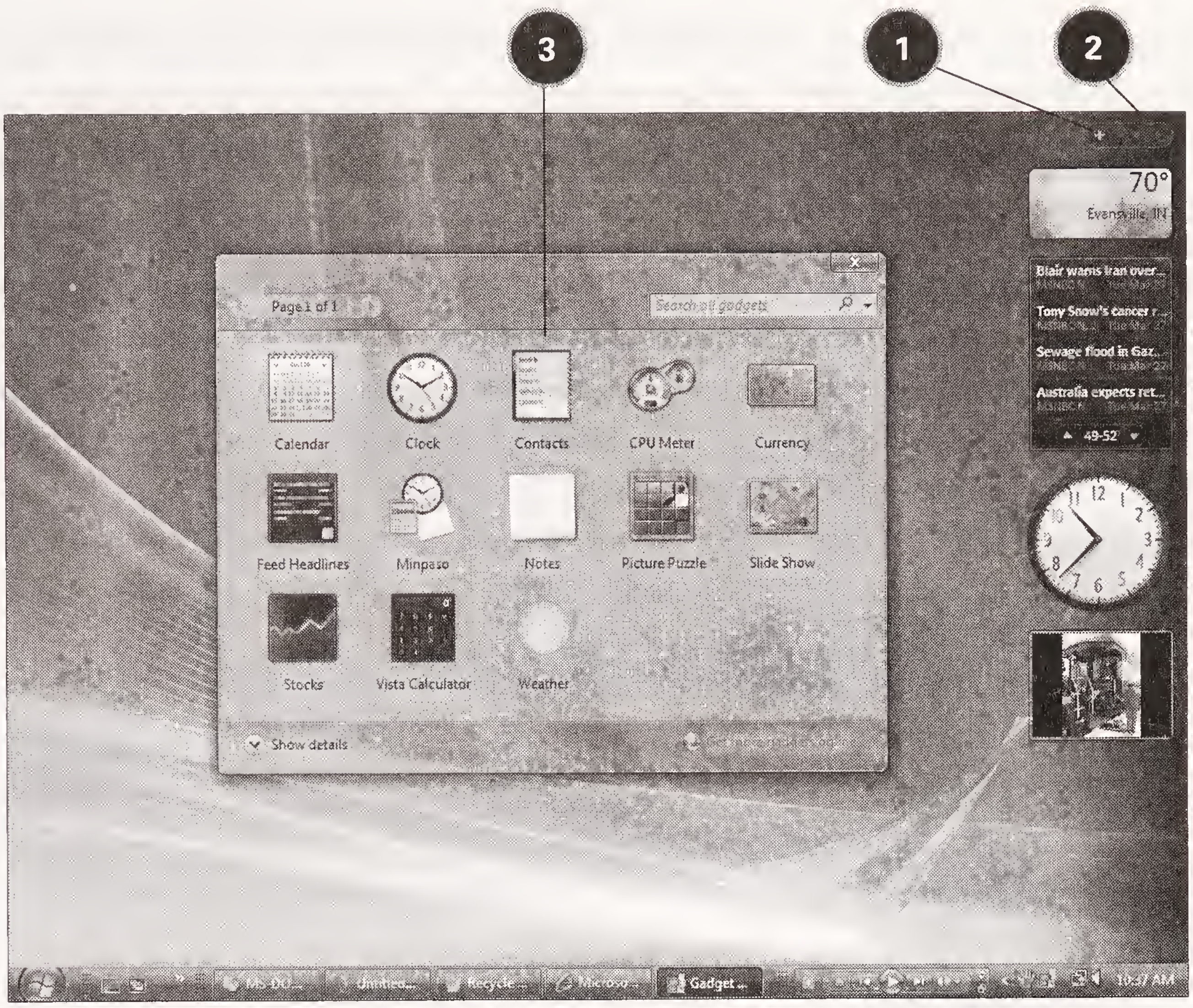
The first surprise on the Windows Vista desktop is the area above the notification area (or *systray* for veteran Windows users). By default, the right edge of the Windows Vista desktop contains a slideshow of your personal photos, an animated wall clock straight out of a typical 1960s office, and a Web (RSS) feed display (see the opening figure). What is this collection of stuff? Microsoft calls them *gadgets*, and just like kitchen gadgets that can perform only one task (try julienneing carrots with a potato peeler, for example), each Vista gadget is designed to perform a single task. And, to extend the kitchen metaphor one step further, just as you put the kitchen gadgets needed for your latest culinary masterpiece on the counter until you need them, Microsoft provides a special place for its gadgets.

Understanding Gadgets

At the top of Windows Sidebar is a control that contains a plus (+) sign, a left-facing arrow and a right-facing arrow (see Figure 4.1). Click the plus sign to display available gadgets in the Gadgets Gallery. If you have more gadgets active than what will fit onscreen, use the left and right arrows to scroll through active gadgets.

If you click the plus (+) sign at the top of the Windows Sidebar, a Gadgets Gallery dialog appears (see Figure 4.1). Select the gadgets you want to activate from the list. Use Windows Vista's omnipresent Search tool to search for gadgets by name, or use the scroll buttons below the Search tool to browse available gadgets.

For a description of each gadget, click it or use the arrow keys to highlight it.


3
1
2
Page 1 of 1
Search all gadgets
Calendar
Clock
Contacts
CPU Meter
Currency
Feed Headlines
Minpaso
Notes
Picture Puzzle
Slide Show
Stocks
Vista Calculator
Weather
Show details
70°
Evansville, IN
Blair warns Iran over...
Tony Snow's cancer r...
Sewage flood in Gaz...
Australia expects ret...
49-52
Gadget ...
10:47 AM

1 Click to display Gadget Gallery

2 Scrolls through active gadgets

3 Gadget Gallery

Figure 4.1

Working with the Gadgets menu and displaying additional Gadgets

Click the Get More Gadgets Online link shown in Figure 4.1 to open Microsoft's Gadgets Gallery. Select a gadget, click Download to Windows Sidebar and proceed through the security dialogs to add it to your sidebar (and the Gadgets Gallery) immediately.

To add a gadget to the Windows Sidebar, double-click the gadget in the Gallery or right-click it and select Add. To remove a gadget from the Windows Sidebar, right-click it and select Remove from the menu.

To configure a gadget, right-click it or move the mouse to the right side of the gadget and click the setup (wrench) icon. In addition to Remove, other options include the following:

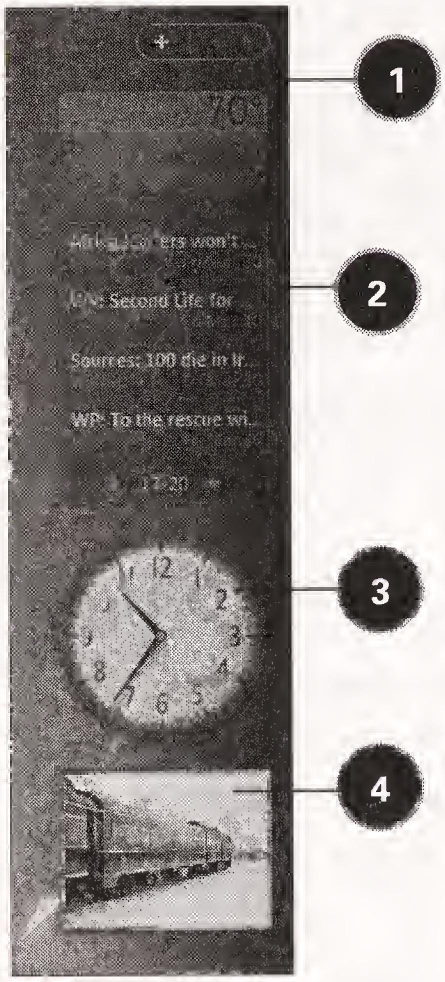
- Opacity—By default, gadgets start out at 100%, but you can adjust them (when the default Windows Aero interface is in use) to an opacity of as little as 20%. Figure 4.2 shows how typical gadgets might appear with opacities of 20%, 40%, 60% and 80% (top to bottom).

NOTE

Hundreds of additional gadgets for hobbies, lifestyle, games, utilities and many other uses are now available. Whether you're an eBay fan, use a wireless network, or want to count down the seconds to your favorite event, there's a gadget for you.

To learn how to develop gadgets, to download additional gadgets, or for tech support, go to http://microsoftgadgets.com.

- Detach from Windows Sidebar—Select this if you want to drag a gadget to a different location on your desktop. To return the gadget to the Windows Sidebar, drag it back to the Windows Sidebar and release it.
- Settings—Use this to configure options for the selected gadget. For example, the Slide Show gadget has settings for which directory (folder) to display, whether to include subfolders and the sample pictures folder, and what timings and transitions to use. You can also open the Settings dialog for a gadget by clicking the check mark icon next to the gadget.



① 20% opacity

② 40% opacity

③ 60% opacity

④ 80% opacity

Figure 4.2

Gadgets set for opacities from 20% to 80%.

- Move—Permits gadget to be dragged up or down on the Windows Sidebar.
- Add Gadgets—Opens the Gadgets Gallery from which you can choose gadgets to add to the Windows Sidebar.
- Bring Gadgets to Front—Displays the Windows Sidebar without an overlay.

Note that when you move your mouse over a gadget, it becomes 100% opaque.

TIP

You can run more than one copy of a gadget in your Windows Sidebar at the same time and configure them with different options. For example, I use a second clock that's labeled eBay Time (so I don't need to strain my brain figuring out when to place my last-nanosecond bid).

Configuring Windows Sidebar

If you right-click an empty portion of the Windows Sidebar, you'll see the Add Gadgets and Bring Gadgets to Front options, along with these:

- Hide Windows Sidebar—Takes the Windows Sidebar offscreen; to display it again, click on the Windows Sidebar Restore icon in the notification area.
- Properties—Specifies the location of the Windows Sidebar, whether to place the Windows Sidebar on top of other windows, whether to start the Windows Sidebar with Windows, and which monitor hosts the Windows Sidebar
- Help—Displays Windows Sidebar-specific help.
- Exit—Closes the Windows Sidebar; you can restart the Windows Sidebar from the Start menu's Accessories folder, where it is listed as Windows Sidebar.

👍 *Feature Rating:* ***Windows Sidebar***

The New and Improved Vista Start Menu

The Start button familiar since the days of Windows 95 and Windows NT 4.0 has been replaced by a Microsoft Windows Vista logo in the lower left-hand corner of the desktop, but it works the same way: Click it to get started. Right away, you'll notice several differences between Vista's Start menu (see Figure 4.3) and Windows XP's:

- Windows Vista has room for eight featured programs, not six as with Windows XP.
- Windows Vista provides shortcuts in the right column for Games as well as for Documents, Pictures, and Music.
- Windows Vista provides a fill-in-the-blank search tool as soon as you open the Start menu.
- Windows Vista menus support Aero.
- Windows Vista offers a low-power sleep button, a lock button, and a fly-out menu that also provides selections for Switch User, Log Off, Restart, Hibernate, and Shut Down.

One significant omission compared to Windows XP is the lack of a Run button in the default configuration (it's been exiled to the Accessories menu). However, you can bring it back through the Customization menu.

➪ For more information on setting up the Run command, see "Customizing the Start Menu," p. 81, this chapter.

➪ For more information about the Games Explorer, see Chapter 10, "Gaming with Windows Vista."

➪ For more information about the Documents, Pictures, Music and Computer Explorers, see Chapter 5, "Vista Tools for Faster and Better File Organization."

➪ For more information about the Network Explorer, see Chapter 12, "Building a Home Network the Windows Vista Way."

The following sections discuss what's new about the Start menu.

Using Search

Windows Vista provides two Search tools on the Start menu (refer to Figure 4.3). The Start Search tool directly above the Start button is designed to search for specified items in one of two places:

- The computer
- The Internet

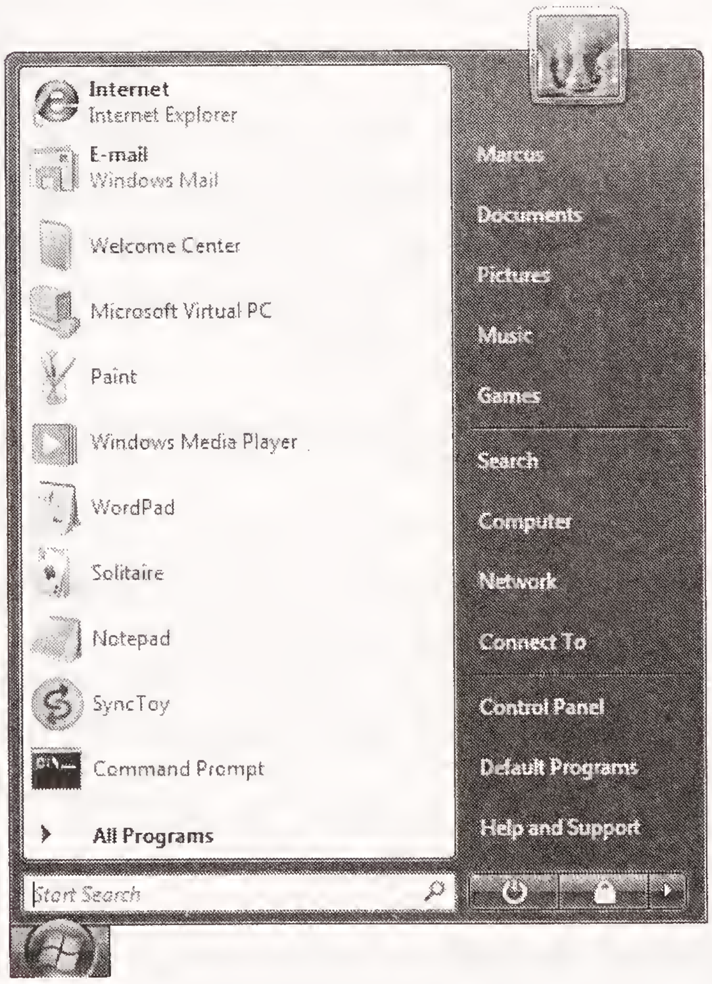

Internet
Internet Explorer
E-mail
Windows Mail
Welcome Center
Microsoft Virtual PC
Paint
Windows Media Player
WordPad
Solitaire
Notepad
SyncToy
Command Prompt
All Programs
Start Search
Marcus
Documents
Pictures
Music
Games
Search
Computer
Network
Connect To
Control Panel
Default Programs
Help and Support

Figure 4.3

A typical Windows Vista Start menu.

You can also search with the Search link in the right-hand menu.

The speed of Search is based in large part on Windows Vista's creation of a search index in real-time. As you use files and folders on your computer, Windows Vista indexes them for faster retrieval. Thus, a search that would have taken minutes with Windows XP can take just a few seconds with Windows Vista.

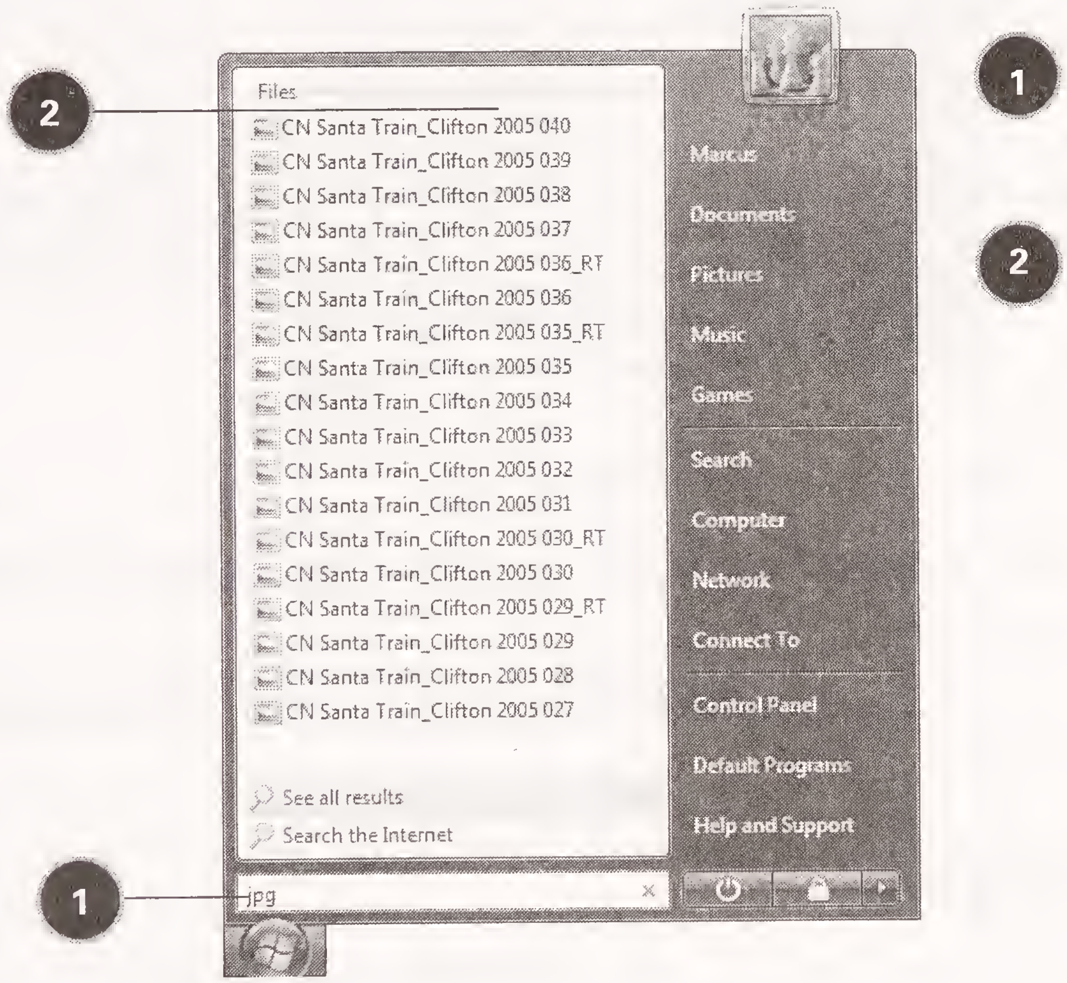
➪ To learn more about adjusting how the index works, see "Indexing Options," Chapter 6, p. 128.

By default, a search starts as soon as you enter text into the Start Search window. Vista Search checks the computer's index for matching files. As you type, results appear in the left-hand pane of the Start menu. In Figure 4.4, digital camera (.jpg) pictures are displayed by a search specifying **jpg** in the Start Search window.

To search the Internet, click Search the Internet after you enter your search text. By default, Windows Vista uses Microsoft Windows Live to search the Internet.

NOTE

As you navigate the right-hand side of the Start menu, note that the icon at the top of the menu changes as you point to each option. The Documents shortcut displays a folder, whereas Pictures displays a folder, including photos. Point to Music, and a folder icon featuring a CD and music notes appears. Point to Games, and the Ace of Diamonds appears.


2
Files
CN Santa Train_Clifton 2005 040
CN Santa Train_Clifton 2005 039
CN Santa Train_Clifton 2005 038
CN Santa Train_Clifton 2005 037
CN Santa Train_Clifton 2005 036_RT
CN Santa Train_Clifton 2005 036
CN Santa Train_Clifton 2005 035_RT
CN Santa Train_Clifton 2005 035
CN Santa Train_Clifton 2005 034
CN Santa Train_Clifton 2005 033
CN Santa Train_Clifton 2005 032
CN Santa Train_Clifton 2005 031
CN Santa Train_Clifton 2005 030_RT
CN Santa Train_Clifton 2005 030
CN Santa Train_Clifton 2005 029_RT
CN Santa Train_Clifton 2005 029
CN Santa Train_Clifton 2005 028
CN Santa Train_Clifton 2005 027
See all results
Search the Internet
1
jpg
Marcus
Documents
Pictures
Music
Games
Search
Computer
Network
Connect To
Control Panel
Default Programs
Help and Support

1 Search text

2 Files matching search text

Figure 4.4

Searching for .jpg files on the computer.

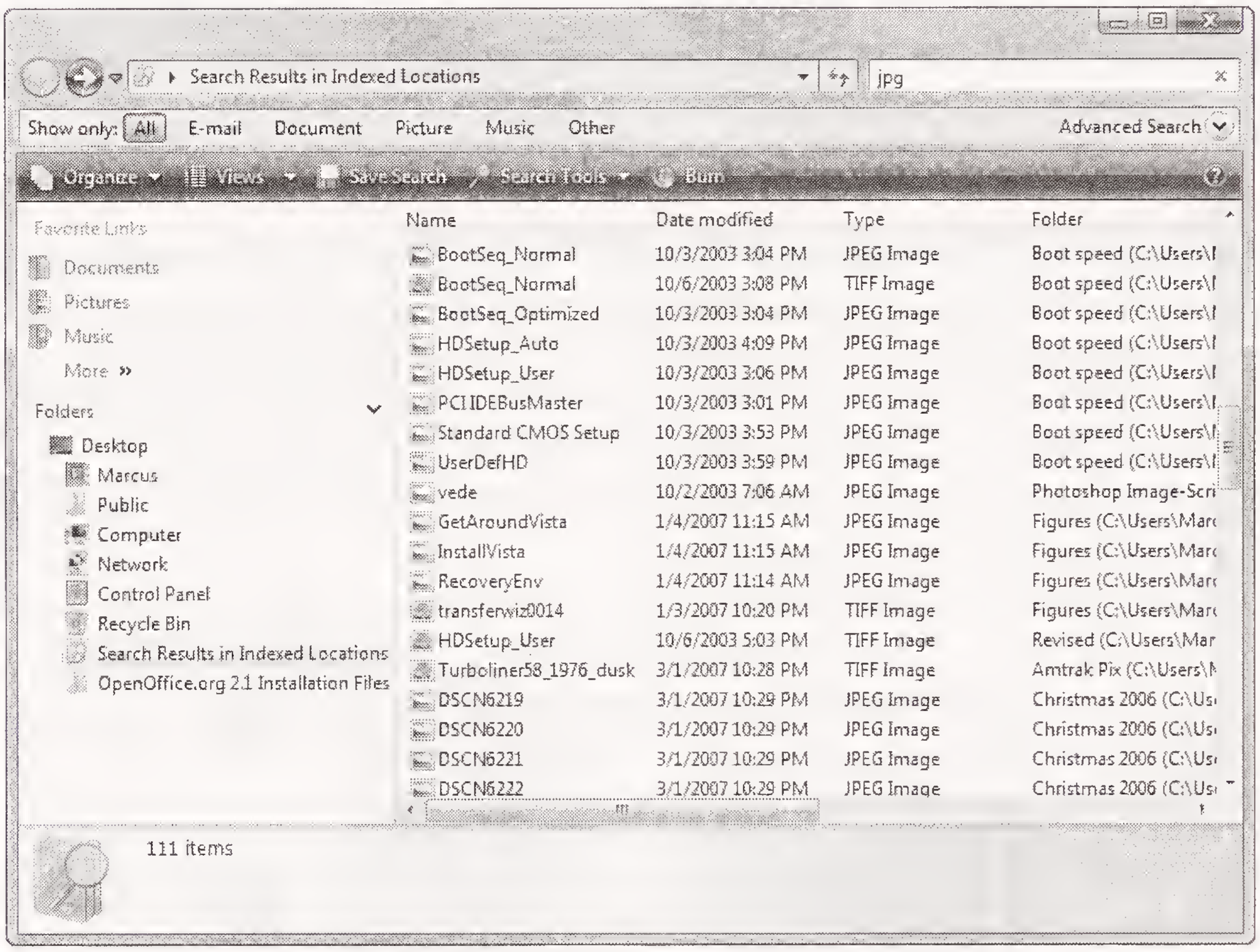
If many files match your search criteria, only a few of them will appear in the left pane of the menu. To see all matching files, or to use more search options, click See All results after entering a

TIP

To reduce the number of incorrect hits, use double quotes around your search phrase.

search term or phrase into the Search tool to open the Search Results in Indexed Locations folder (see Figure 4.5). This folder also opens when you click the Search link in the right-hand pane of the Start menu.

You can specify the type(s) of files to search for. You can also use this folder to save your search for reuse, burn a CD or DVD containing items that match your search, and customize your search in other ways.


Search Results in Indexed Locations
jpg
Show only: All E-mail Document Picture Music Other
Advanced Search
Organize
Views
Save Search
Search Tools
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Desktop
Marcus
Public
Computer
Network
Control Panel
Recycle Bin
Search Results in Indexed Locations
OpenOffice.org 2.1 Installation Files
111 items

Name	Date modified	Type	Folder
BootSeq_Normal	10/3/2003 3:04 PM	JPEG Image	Boot speed (C:\Users\I
BootSeq_Normal	10/6/2003 3:08 PM	TIFF Image	Boot speed (C:\Users\I
BootSeq_Optimized	10/3/2003 3:04 PM	JPEG Image	Boot speed (C:\Users\I
HDSetup_Auto	10/3/2003 4:09 PM	JPEG Image	Boot speed (C:\Users\I
HDSetup_User	10/3/2003 3:06 PM	JPEG Image	Boot speed (C:\Users\I
PCI IDEBusMaster	10/3/2003 3:01 PM	JPEG Image	Boot speed (C:\Users\I
Standard CMOS Setup	10/3/2003 3:53 PM	JPEG Image	Boot speed (C:\Users\I
UserDefHD	10/3/2003 3:59 PM	JPEG Image	Boot speed (C:\Users\I
vede	10/2/2003 7:06 AM	JPEG Image	Photoshop Image-Scri
GetAroundVista	1/4/2007 11:15 AM	JPEG Image	Figures (C:\Users\Mar
InstallVista	1/4/2007 11:15 AM	JPEG Image	Figures (C:\Users\Mar
RecoveryEnv	1/4/2007 11:14 AM	JPEG Image	Figures (C:\Users\Mar
transferwiz0014	1/3/2007 10:20 PM	TIFF Image	Figures (C:\Users\Mar
HDSetup_User	10/6/2003 5:03 PM	TIFF Image	Revised (C:\Users\Mar
Turboliner58_1976_dusk	3/1/2007 10:28 PM	TIFF Image	Amtrak Pix (C:\Users\
DSCN6219	3/1/2007 10:29 PM	JPEG Image	Christmas 2006 (C:\Us
DSCN6220	3/1/2007 10:29 PM	JPEG Image	Christmas 2006 (C:\Us
DSCN6221	3/1/2007 10:29 PM	JPEG Image	Christmas 2006 (C:\Us
DSCN6222	3/1/2007 10:29 PM	JPEG Image	Christmas 2006 (C:\Us

Figure 4.5

Using the Search Index to search for local files.

By default, the Index is the search target. However, you can also select other locations to search.

➪ To learn more about using the Search Index, see "Indexing Options," Chapter 6, p. 128.

Using All Programs

As soon as you move your mouse over All Programs in the Start menu, the left-hand pane of the Start menu switches to a display a list of installed programs and program folders. As with Windows XP, newly installed programs are highlighted in a contrasting color.

This menuing method saves significant screen real estate over the expanding menus used since the days of Windows 95 and NT 4.0. On one of my

Windows XP systems, I had so many programs installed that I had to move some of the shortcuts to a subfolder because they literally wouldn't fit on one screen! Windows Vista's method, on the other hand, ensures that you will still be able to see your desktop, regardless of how many (or how few) programs you have installed.

If you open a folder within the All Programs menu, the folder opens within the same pane and automatically scrolls to display the contents (see Figure 4.6). Click the folder again to close it.

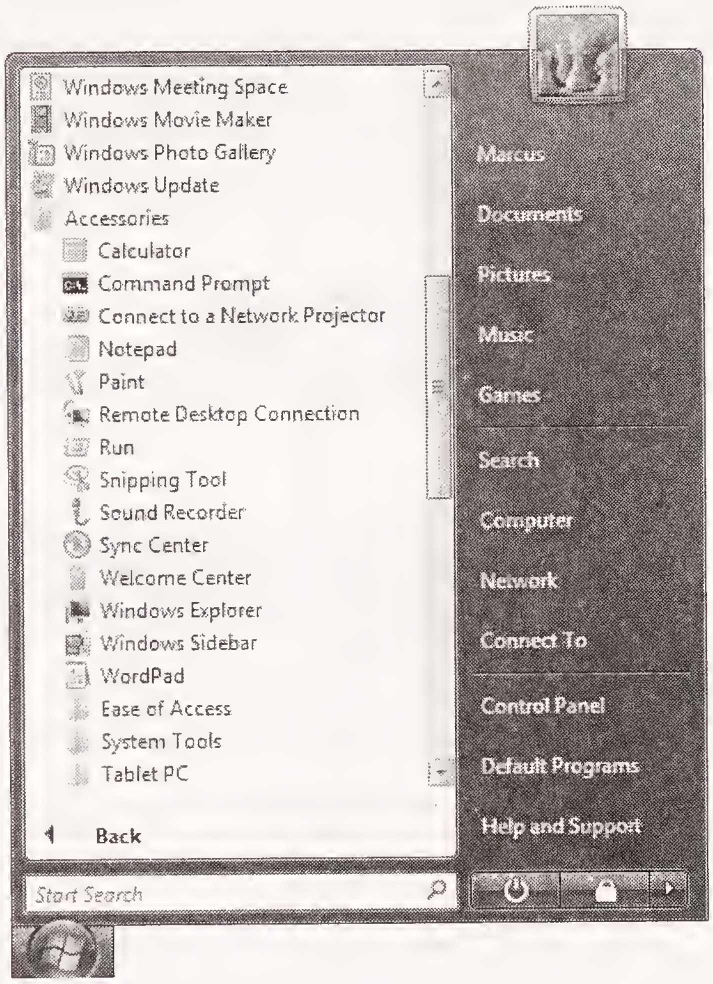

Windows Meeting Space
Windows Movie Maker
Windows Photo Gallery
Windows Update
Accessories
Calculator
Command Prompt
Connect to a Network Projector
Notepad
Paint
Remote Desktop Connection
Run
Snipping Tool
Sound Recorder
Sync Center
Welcome Center
Windows Explorer
Windows Sidebar
WordPad
Ease of Access
System Tools
Tablet PC
Back
Start Search
Marcus
Documents
Pictures
Music
Games
Search
Computer
Network
Connect To
Control Panel
Default Programs
Help and Support

Figure 4.6

Opening the Accessories folder.

Customizing the Start Menu

The Vista Start menu is a pleasure to use, but you can always tweak it to make it even better. To get started, right-click the Start button and select Properties to open the Start Menu tab of the Taskbar and Start Menu Properties sheet (see Figure 4.7 A).

⇨ You can also access this dialog by selecting Taskbar and Start Menu from the Personalization menu. For more information about Personalization, see "Personalizing Your Desktop," p. 85, this chapter.

TIP

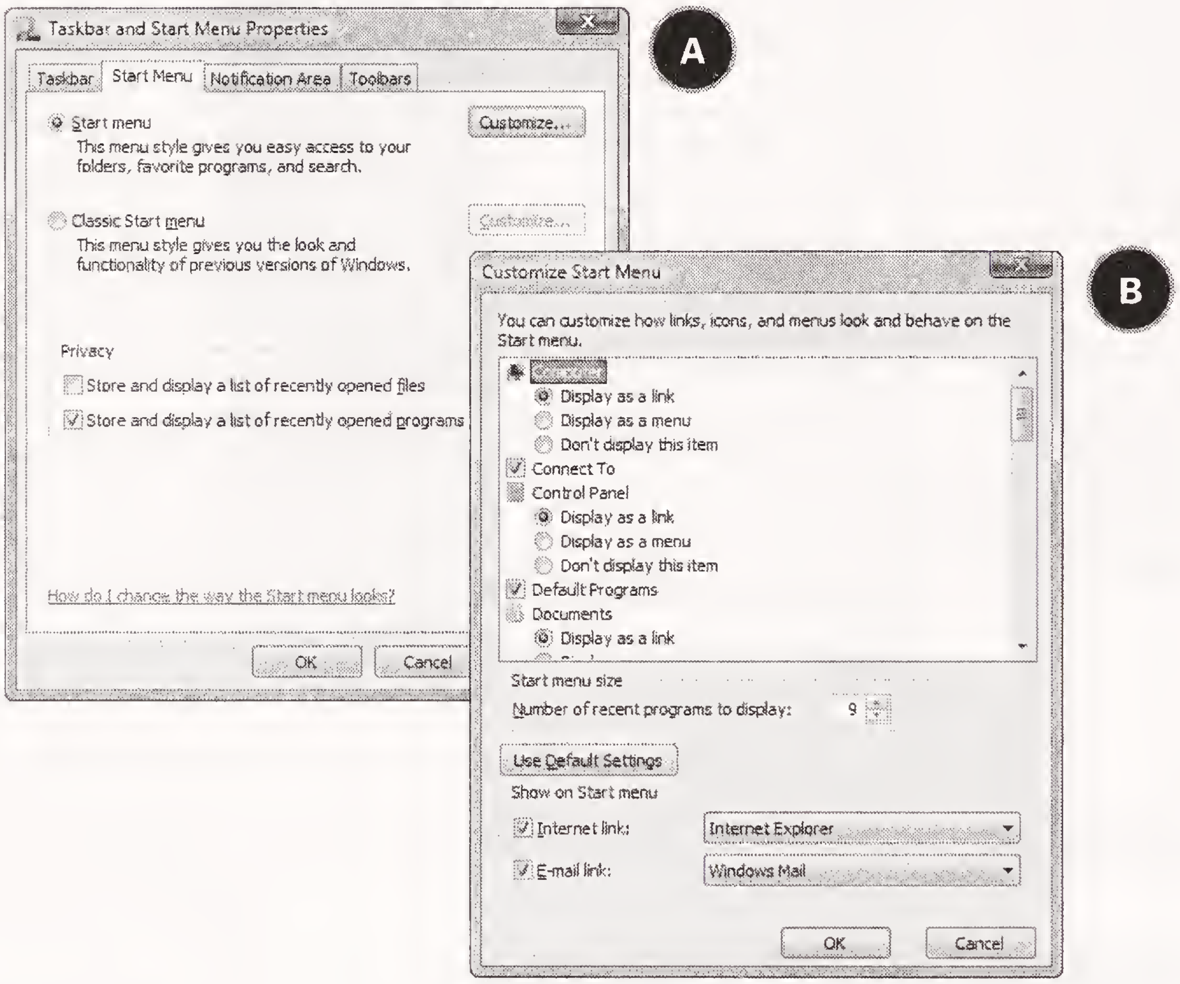
Where's the the Run command? Windows Vista buries it, by default, in the Accessories menu. However, you can put it back on the Start menu (where it belongs if you're a hard-core command-line user) with Customize Start Menu.

By default, Windows Vista displays a list of recently opened files and recently opened programs. If you're feeling a bit paranoid, clear the check boxes in the Privacy section to disable these options.

Click the Customize button to fine-tune the Start menu. You can change right-pane links in the Start menu into menus or hide them, clear check boxes to hide other options, add options you use frequently, adjust the number of recent programs on the Start menu, and select the preferred web browser and email client (see Figure 4.7 B).

A Adjusting Start menu options.

B Customizing the Start menu.



● Start menu
This menu style gives you easy access to your folders, favorite programs, and search.

○ Classic Start menu
This menu style gives you the look and functionality of previous versions of Windows.

Privacy
☐ Store and display a list of recently opened files
☑ Store and display a list of recently opened programs

How do I change the way the Start menu looks?

You can customize how links, icons, and menus look and behave on the Start menu.

● Display as a link
○ Display as a menu
○ Don't display this item
☑ Connect To
Control Panel
● Display as a link
○ Display as a menu
○ Don't display this item
☑ Default Programs
Documents
● Display as a link

Start menu size
Number of recent programs to display: 9

Show on Start menu
☑ Internet link: Internet Explorer
☑ E-mail link: Windows Mail

Figure 4.7

Tweaking the Start menu.

TIP

If you completely screw up your Start menu, click Use Default Settings to restore things back to normal.

To apply any changes you make to this menu, click OK to close the Customize menu and then click Apply.

After watching my desktop disappear under the weight of all the programs I install (some of which I actually use!), a fast-on-its-feet menu that doesn't hog the desktop is a pleasure.

Feature Rating: ***Windows Start Menu***

Enabling and Customizing the Classic Start Menu

If you prefer the screen-sucking Windows 2000/98-style Start menu, it's still around. Right-click the Start orb, select Properties, and click Classic Start Menu on the Start Menu tab of the Taskbar and Start Menu Properties sheet. Click Customize from the same tab to change the defaults.

From the Customize menu, click Clear to remove your website, program shortcut, and document history. Click Advanced to open a Windows Explorer view of the Classic Start menu. In this view, you can right-click to create a shortcut or object on the menu. Any shortcuts or objects you add will be usable with either the standard or the classic menu.

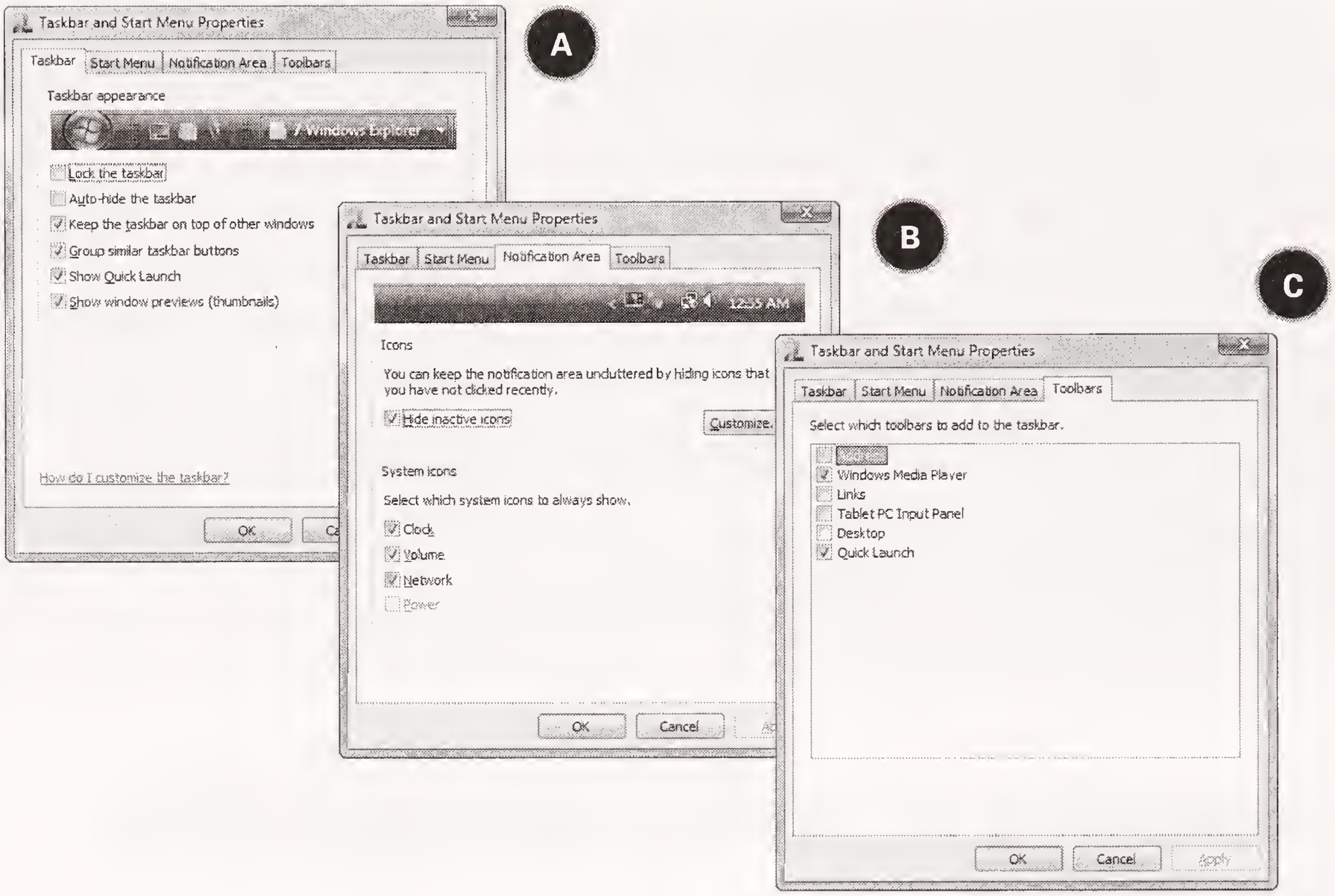
Customizing the Taskbar, Notification Area, and Toolbars

To customize current Taskbar settings, click the Taskbar tab of the Taskbar and Start Menu Properties sheet (see Figure 4.8 A). The Taskbar has one major new feature: by default, it displays a live window preview (thumbnail) when you hover your mouse over a taskbar icon.

Click the Notification Area tab to customize the system and other icons displayed there (Figure 4.8 B). The notification area can display up to four system icons on portable systems, and up to three on AC-powered systems. You can also customize the appearance of active or inactive application and utility icons with the Customize button.

To customize current notification area settings, click the Toolbars tab of the Taskbar and Start Menu Properties sheet (see Figure 4.8 C). By default, Windows Media Player and Quick Launch toolbars attach to the Taskbar. Other options include Address, Links, Tablet PC Input Panel, and Desktop.

After making changes, click Apply, then OK to put your changes into effect.



Taskbar and Start Menu Properties

Taskbar appearance

☐ Lock the taskbar
☐ Auto-hide the taskbar
☑ Keep the taskbar on top of other windows
☑ Group similar taskbar buttons
☑ Show Quick Launch
☑ Show window previews (thumbnails)

How do I customize the taskbar?

Taskbar and Start Menu Properties

Icons

You can keep the notification area uncluttered by hiding icons that you have not clicked recently.

☑ Hide inactive icons

System icons

Select which system icons to always show.

☑ Clock
☑ Volume
☑ Network
☐ Power

Taskbar and Start Menu Properties

Select which toolbars to add to the taskbar.

☑ Windows Media Player
☐ Links
☐ Tablet PC Input Panel
☐ Desktop
☑ Quick Launch

A Taskbar options.

B Notification area options.

C Toolbars options.

Figure 4.8

Tweaking other Start menu-related features.

Customizing the Desktop

Now that you've customized the right side, bottom, and left corner of the desktop, what's left? The rest of the desktop! By this time, you probably won't be surprised to discover that Windows Vista mixes up a blend of familiar methods and new options for desktop customization.

To start, right-click an empty area of the desktop. From the right-click menu, you can change viewing options, refresh the desktop, create a new object on the desktop, and personalize the desktop by displaying, hiding or changing the size of desktop icons.

Customizing Icon Sizes and Arrangements

Windows Vista defaults to displaying medium-size icons that are aligned to an invisible grid on the desktop. However, you can also choose large or classic icons. Figure 4.9 compares a typical collection of desktop icons when the default Medium and optional Large or Classic (small) icon sizes are selected.

Feature Rating: ***Desktop Icons***

NOTE

Icons provided by third-party software may not fully support large icon view. In those cases, medium icons (as in Figure 4.9 B) are used.

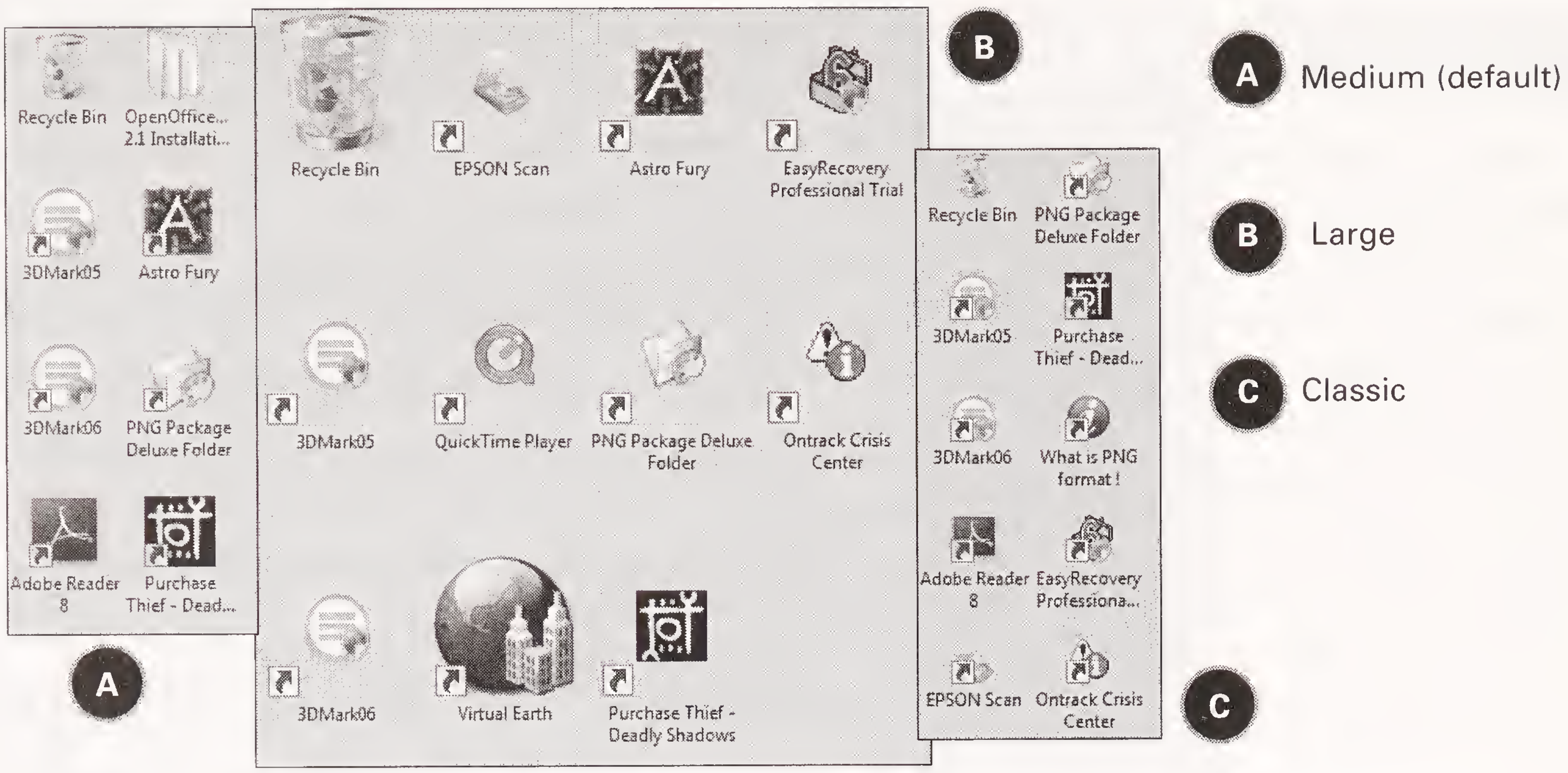

A
B
C
A Medium (default)
B Large
C Classic
Recycle Bin
OpenOffice... 2.1 Installati...
3DMark05
Astro Fury
3DMark06
PNG Package Deluxe Folder
Adobe Reader 8
Purchase Thief - Dead...
EPSON Scan
EasyRecovery Professional Trial
QuickTime Player
Ontrack Crisis Center
Virtual Earth
Purchase Thief - Deadly Shadows
What is PNG format !
EasyRecovery Professiona...

Figure 4.9

Desktop icon sizes

Personalizing Your Desktop

Although the ability to configure desktop icon sizes right from the desktop is useful, the really big news about Vista's desktop configuration is what happens when you click Personalize from the right-click menu: You open the brand-new Personalization dialog in Control Panel (see Figure 4.10).

Personalization combines the traditional Display properties sheet with customization settings lifted from the Mouse and Sounds and Audio Devices properties sheets in Windows XP. Although it might seem odd if you're a Windows veteran, putting all these options on a single dialog can make it easier than ever to make your PC look and sound the way you want.

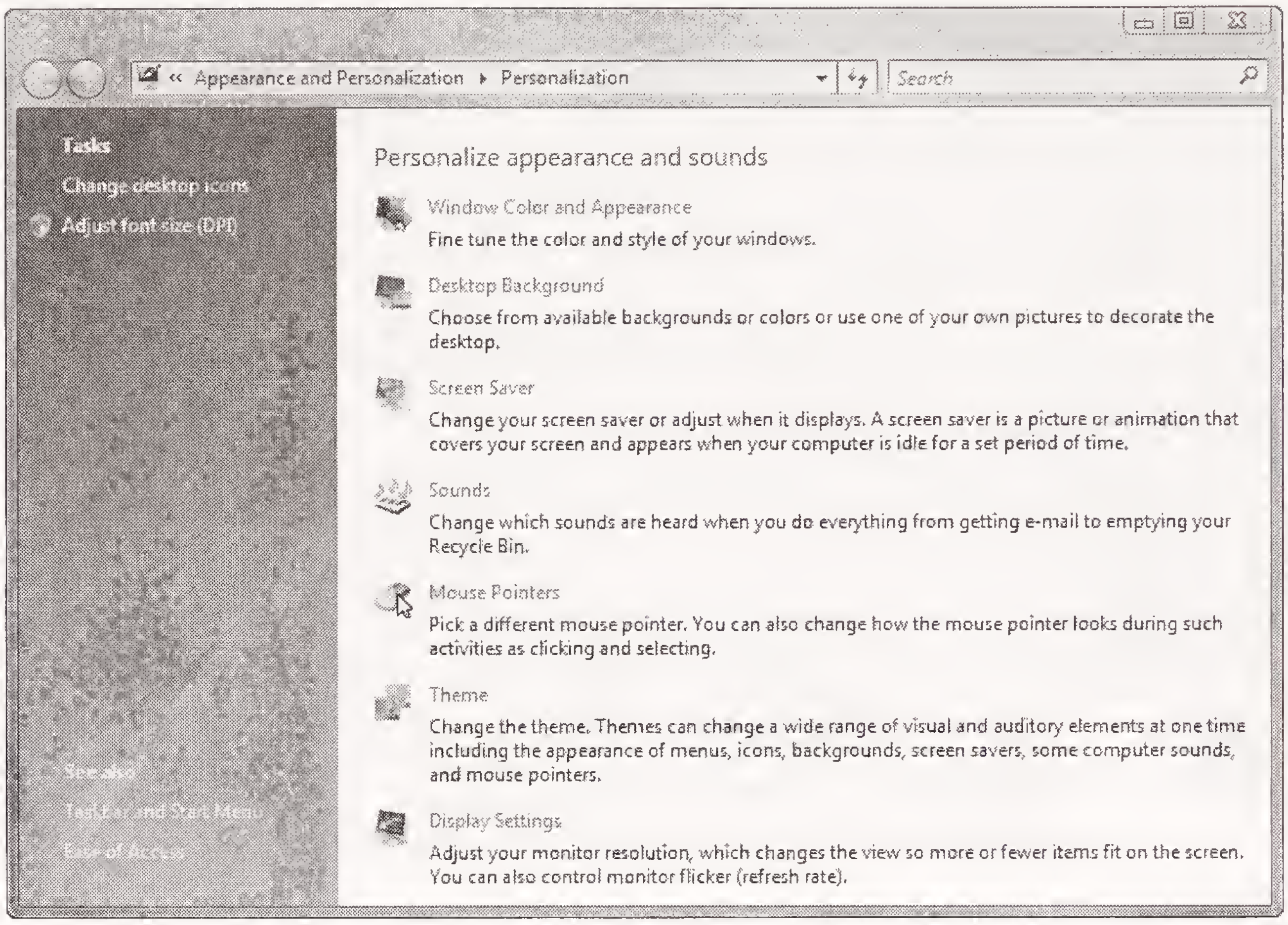
Display Settings

Click Display Settings to open the Monitor dialog shown in Figure 4.11. Except for the Aero borders, this looks identical to the Settings tab of the Display Properties sheet in Windows XP, and it works the same way:

- Use the Resolution slider to adjust the screen resolution. Thanks to the new scaling features in Windows Vista, your icons and desktop will still look good, even if you use a non-native resolution (such as 800×600 on a 17-inch LCD, for example).

TIP

Click the How Do I Get the Best Display? link to bring up a Windows Help dialog filled with tips for configuring your resolution and color settings on both LCD and CRT displays.


« Appearance and Personalization ▸ Personalization
Search
Tasks
Change desktop icons
Adjust font size (DPI)
See also
Taskbar and Start Menu
Ease of Access

Personalize appearance and sounds

Window Color and Appearance
Fine tune the color and style of your windows.

Desktop Background
Choose from available backgrounds or colors or use one of your own pictures to decorate the desktop.

Screen Saver
Change your screen saver or adjust when it displays. A screen saver is a picture or animation that covers your screen and appears when your computer is idle for a set period of time.

Sounds
Change which sounds are heard when you do everything from getting e-mail to emptying your Recycle Bin.

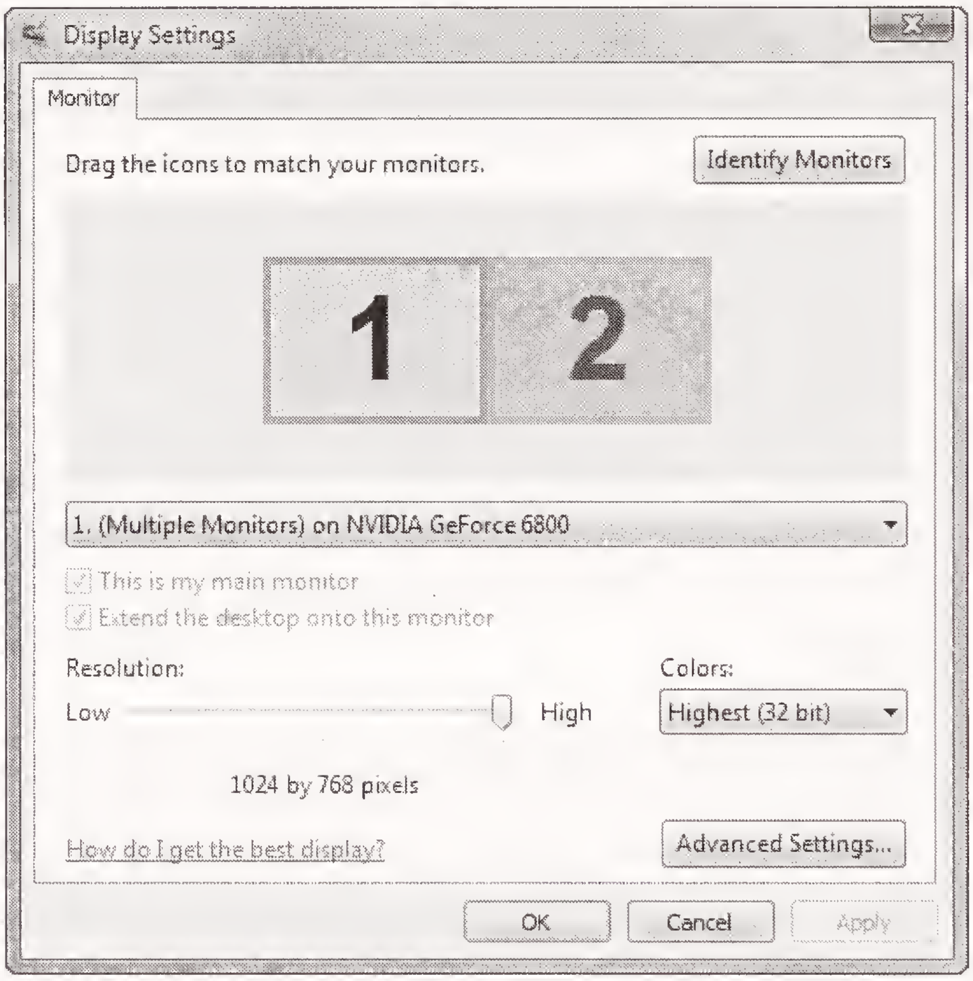
Mouse Pointers
Pick a different mouse pointer. You can also change how the mouse pointer looks during such activities as clicking and selecting.

Theme
Change the theme. Themes can change a wide range of visual and auditory elements at one time including the appearance of menus, icons, backgrounds, screen savers, some computer sounds, and mouse pointers.

Display Settings
Adjust your monitor resolution, which changes the view so more or fewer items fit on the screen. You can also control monitor flicker (refresh rate).

Figure 4.10

The Personalization main dialog.


Display Settings
Monitor
Identify Monitors
1
2
Low
High
How do I get the best display?
Advanced Settings...
OK
Cancel
Apply

Drag the icons to match your monitors.

1. (Multiple Monitors) on NVIDIA GeForce 6800

☑ This is my main monitor
☑ Extend the desktop onto this monitor

Resolution: 1024 by 768 pixels

Colors: Highest (32 bit)

Figure 4.11

The Display Settings (Monitor) dialog for a system using a dual-display compatible video card or a laptop with an external monitor connected.

- Highest (32-bit) color is selected by default; Medium (16-bit) color is also available but is not recommended unless Highest does not work or causes severe system slowdowns.
- If you have more than one monitor installed, click the icon or use the pull-down monitor menu to select the monitor you want to adjust. Click the Identify Monitors button to determine which monitor is which.

Click the Advanced Settings button to display the Adapter, Monitor, and Troubleshoot tabs; video drivers provided by GPU manufacturers often include a tab that launches a proprietary video driver control panel with additional options..

TIP

The Adapter tab displays your GPU's video memory size. Click List All Modes to select from all available display resolution, color quality, and refresh rate combinations for the current display, including resolutions not available from the standard Display Settings dialog.

Visual Appearance

Click Window Color and Appearance on the Personalization menu to open the dialog shown in Figure 4.12 A. You can choose from eight different colors.

NOTE

If you use Windows Vista Basic, or if your computer doesn't support Aero, clicking Window Color and Appearance opens the Appearance Settings dialog shown in Figure 4.12 B.

If your system is barely up to running Aero, you can speed up the display by clearing the Enable Transparent Glass option. Adjust the level of transparency with the Intensity slider. Keep in mind that one of the benefits of using Aero is being able to see objects on your desktop even when the Windows Sidebar is on top.

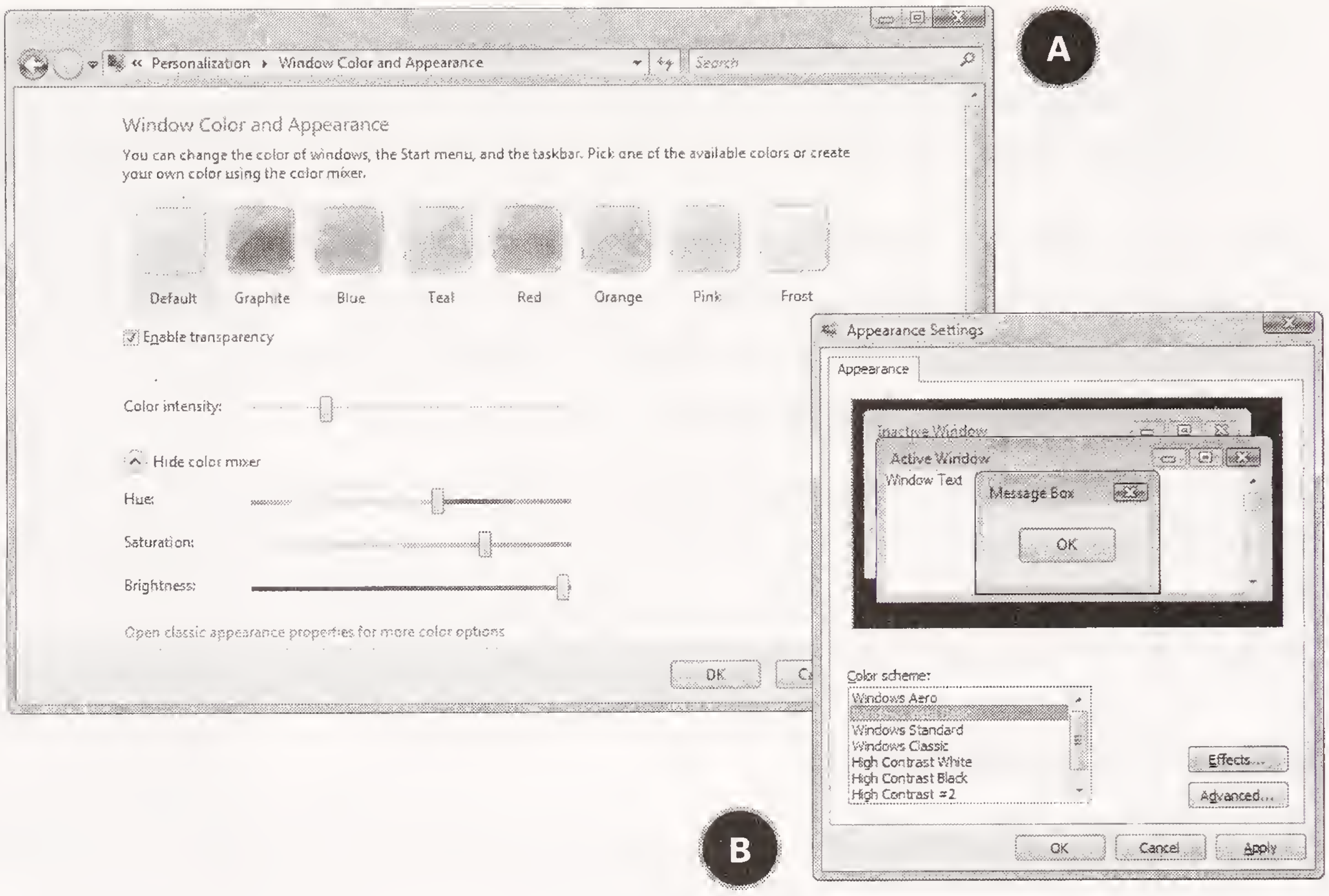
To further customize your windows, click the Show Color Mixer button to reveal the Color, Saturation, and Brightness sliders shown in Figure 4.12 A. Adjust these options as desired.

If you prefer Vista Basic or or classic Windows desktop color schemes, click the Open Classic Appearance Properties button. You can choose from Windows Vista Basic, Windows Standard, Windows Classic, and high-contrast color schemes.

If you need a high-contrast display, you probably need other accessibility options as well. You can configure all these settings from a single main dialog by selecting the Ease of Access link. See the sidebar "Configuring Ease of Access Options," p. 91, this chapter, for more information.

A Fine-tuning Aero's transparency and window colors.

B Selecting Vista Basic or other non-Aero color schemes.



Window Color and Appearance

You can change the color of windows, the Start menu, and the taskbar. Pick one of the available colors or create your own color using the color mixer.

☑ Enable transparency

A
« Personalization ▸ Window Color and Appearance
Search
Default
Graphite
Blue
Teal
Red
Orange
Pink
Frost
Color intensity:
Hide color mixer
Hue:
Saturation:
Brightness:
Open classic appearance properties for more color options
OK
Appearance Settings
Appearance
Inactive Window
Active Window
Window Text
Message Box
OK
Color scheme:
Windows Aero
Windows Standard
Windows Classic
High Contrast White
High Contrast Black
High Contrast #2
Effects...
Advanced...
OK
Cancel
Apply
B

Figure 4.12

Configuring display color schemes.

WARNING

Wondering whether the Advanced Appearance dialog is useful for anybody these days? If you set up a high-contrast color scheme with large fonts, for example, this dialog is quite useful for preventing icon and text overlap (by increasing the icon spacing). Just be careful. Unlike in Windows XP, there's no Defaults button to reset your monkeying around, and no options to save a modified scheme.

Customizing Backgrounds, Screen Saver, and Sound Effects

Windows Vista offers new options for your desktop background, screen saver, and sound effects.

The Desktop Background dialog offers a lot of new options, including backgrounds optimized for widescreen displays, more positioning options, black and white and color photos and, for Windows Vista Ultimate users, full-motion video backgrounds after the free DreamScene Ultimate Extra is downloaded. You can use any .jpg or .bmp file as a background.

If you want to stretch a single background across two monitors, calculate the total width (in pixels) of your displays when running in their native or preferred resolutions. For example, if you have one display running at 1024x768 pixels and another running at 1440x960 pixels, the total width is 2464 pixels (1024+1440). Crop an image to the total width and the height of the higher-resolution display. In this example, an image at 2464x960 is needed.

Use the Browse button to locate your image, and select Tile (the second option from the left) as the display type to display the image across both displays.

The Photos option in Screen Saver adds several new features, including the option to specify photos by Photo Gallery tags or ratings and to use various themes for playback, such as Pan and Zoom or Sepia, or use the default Random setting, shuffle the picture order, and adjust the speed of the slideshow. In short, your humble screensaver doubles as a powerful photo display system when you use this option. Keep in mind that your system will not be taking a nap to save power when you use this option, so avoid it if you're using a screen saver as a power conservation tool.

WARNING

Make sure the On Resume, Display Welcome Screen setting is enabled if you like to wander away from your system and don't want somebody fiddling around with your computer while you're away.

➪ To learn more about Photo Gallery themes and other features, see "Using Windows Photo Gallery," Chapter 9, p. 239.

The Windows Sounds dialog now includes Speech Recognition sounds.

➪ To learn more about Speech Recognition, see "Using Speech Recognition," p. 91, this chapter.

NOTE

You can save your favorite combination of sound effects, desktop wallpaper, icons, screensaver, mouse pointers, and desktop elements as a theme, as you could with Windows XP. However, if you want to customize your desktop the easy way, or get ideas for your own customizations, visit these sites: http://themes.belchfire.net, www.windowblinds.com, www.xpthemes.com, or www.ThemeWorld.com.

Adjust Font Size (Font Scaling)

Use Adjust Font Size if you need to use larger fonts than usual across your Windows Vista environment, not just the desktop. Because this is a significant change to how Windows Vista works, the User Account Control pops up and asks for permission to continue. Click Continue to keep going.

When the DPI Scaling dialog appears, note that you can choose from two settings:

- 96 dpi (the default)
- 120 dpi (larger scale)

The default 96 dpi setting puts a lot of text onscreen at one time, while boosting the scale to 120 dpi makes text larger but reduces the amount of text you see onscreen at one time. The 120 dpi setting is a good choice for users with limited vision, or if you need to view the contents of the display from a distance. Keep in mind that you must restart Windows Vista when you change font sizes, just as with older versions.

If you're not satisfied with either standard scale, click the Custom DPI button (see Figure 4.13). Drag the ruler to the right to increase the DPI, or to the left to reduce the DPI. Like numbers instead? Select a standard percentage from the pull-down menu, or type in a custom value. Note that 100%

(96 dpi) is the smallest value possible; if you want smaller text so that you can jam more on the screen, switch to a monitor that permits a higher resolution, but don't blame us if you wind up at the eye doctor's office in later years. Click OK to return to the main dialog.

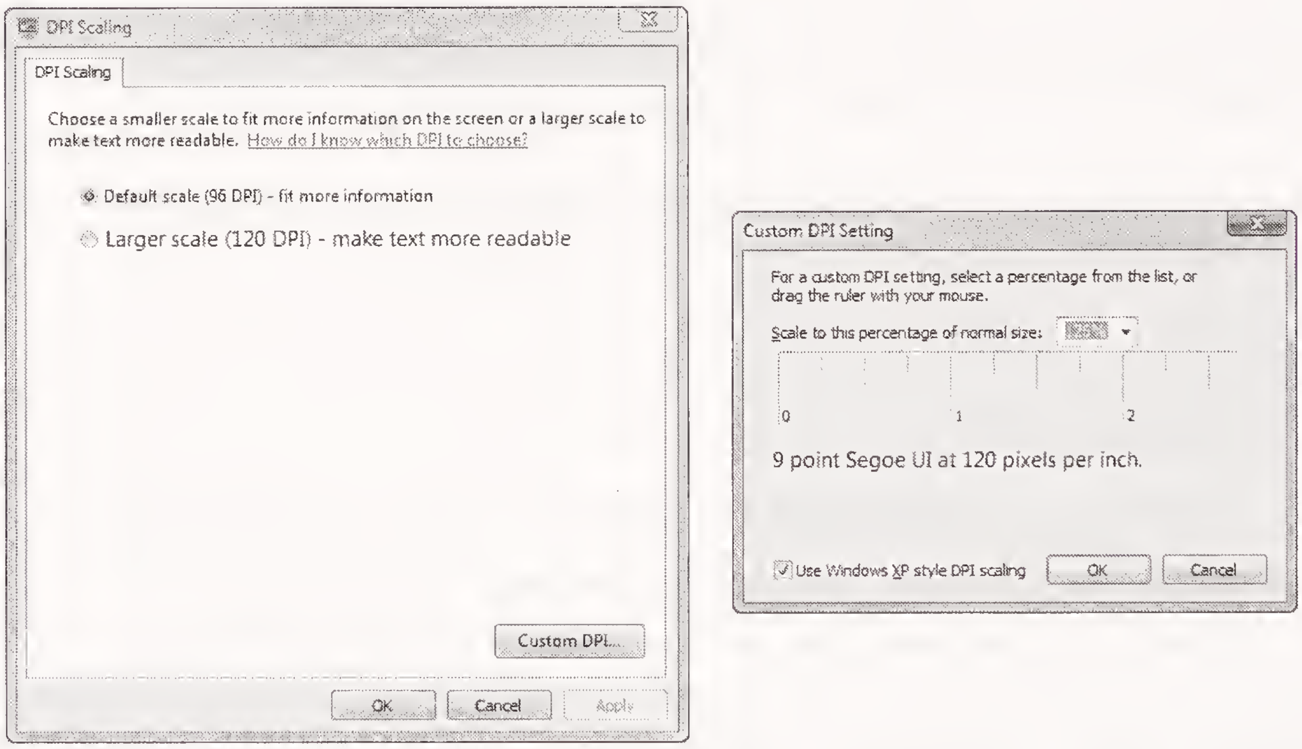
After you create a custom DPI setting, it's displayed on the DPI scaling dialog. To use the custom setting, make sure it's selected, click Apply, click OK, and then restart your system.

Personalization offers you even more ways to customize your computing experience than with previous versions of Windows, and provides the new features needed to support widescreen displays. It really helps you put the "personal" in PC.

Feature Rating: **Personalization**

NOTE

By default, the Use Windows XP style DPI Scaling box in Figure 4.13 is checked when you use 120dpi or lower resolutions. This option enables applications that are not 'DPI-aware' to run properly with large fonts; in such cases, the graphics hardware scales the application and uses virtualization to trick the application into thinking it's running at the normal 96dpi resolution. So, don't touch that checkbox!



Choose a smaller scale to fit more information on the screen or a larger scale to make text more readable. How do I know which DPI to choose?

● Default scale (96 DPI) - fit more information

○ Larger scale (120 DPI) - make text more readable

For a custom DPI setting, select a percentage from the list, or drag the ruler with your mouse.

Scale to this percentage of normal size:

9 point Segoe UI at 120 pixels per inch.

☑ Use Windows XP style DPI scaling

Figure 4.13

Creating a custom DPI setting.

Configuring Ease of Access Options

Although previous versions of Windows have featured accessibility settings, Windows Vista finally makes it easy to set up a system for users with visual or other limitations. To configure accessibility options, click Ease of Access from the See Also section of the Personalization menu, or open the Ease of Access Center in Control Panel. By default, an easy-to-understand synthesized voice reads and highlights each choice in the 'Quick Access to Common Tools' section (you can turn off narration if it is distracting). To select an option, press the space bar when the option is highlighted.

Familiar tools such as Magnifier (which magnifies a portion of the screen under the mouse pointer), Sticky Keys, High Contrast, and On-Screen Keyboard are joined by the new Narrator tool (which echoes keystrokes and reads off system messages) and collections of settings optimized for users with different limitations. By collecting all accessibility settings in a single location, optimizing a Windows-based system for a user's particular requirements has never been easier.

If you need additional accessibility tips, see the Microsoft Accessibility website at www.microsoft.com/enable/.

Using Speech Recognition

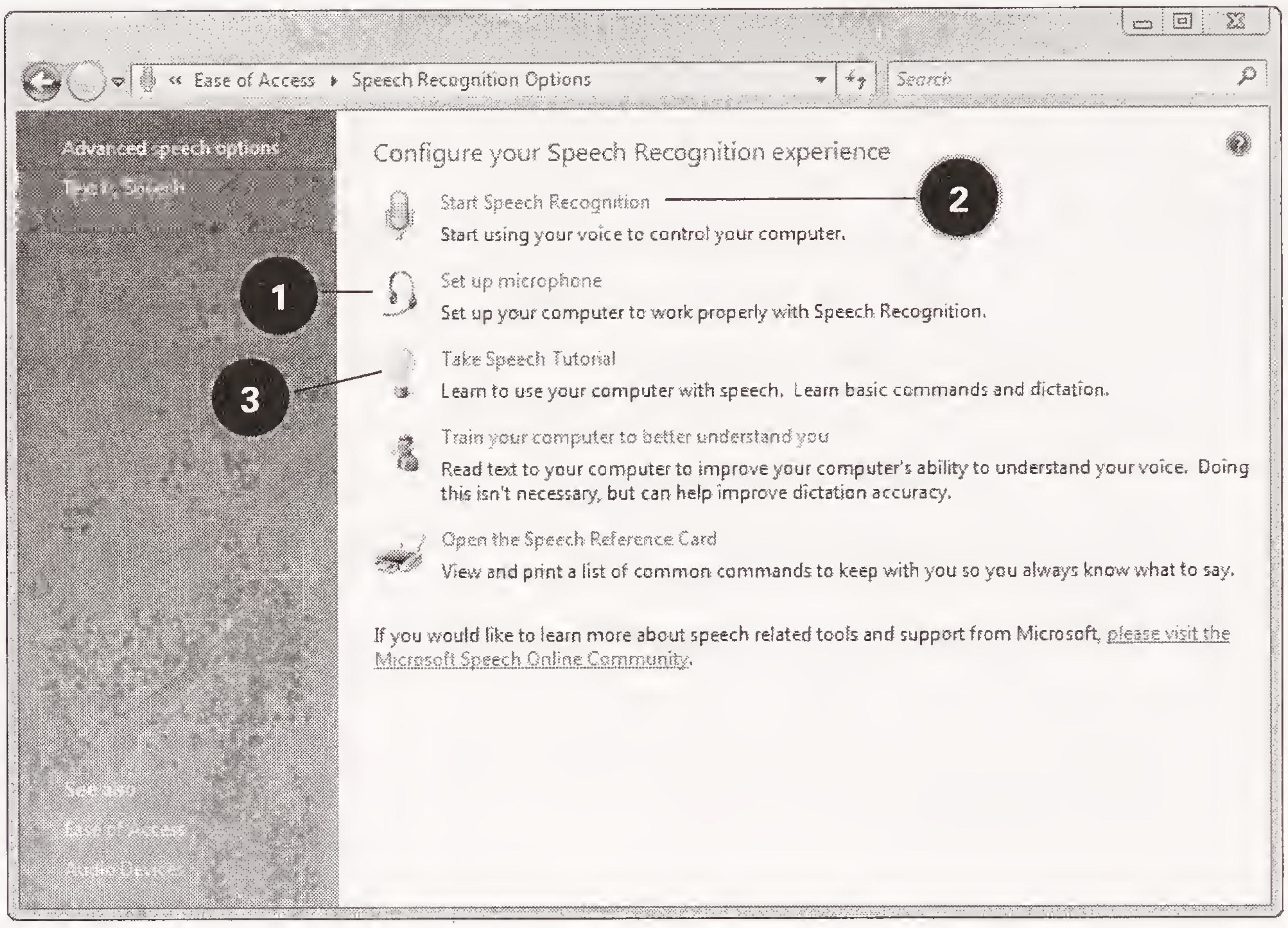
Windows Vista extends the user interface from the mouse, keyboard, and display to your friendly neighborhood microphone with its new Speech Recognition feature, which can be started from either the Alternative Input Devices dialog located in the Ease of Access Center or from Control Panel.

When you select Use Speech Recognition from the Alternative Input Devices dialog, the Speech Recognition dialog in Control Panel opens (see Figure 4.14).

Before you start Speech Recognition, follow these procedures to help your system understand you as well as possible:

1. Run the Set Up Microphone wizard—Even if you use your microphone for live chats, podcasting, or Internet telephony, Speech Recognition can be fussy. The wizard helps you fine-tune microphone position, volume, and gain settings (and, if you've never used a microphone before, it helps you make sure you're using the correct audio jack!).
2. Run the Speech Recognition Tutorial—When you practice dictating text, navigating through a document, and commanding Windows, you become more familiar with the process.

3. Run the Voice Training Wizard—This wizard helps train the computer to recognize your voice.



Configure your Speech Recognition experience

Start Speech Recognition
Start using your voice to control your computer.

Set up microphone
Set up your computer to work properly with Speech Recognition.

Take Speech Tutorial
Learn to use your computer with speech. Learn basic commands and dictation.

Train your computer to better understand you
Read text to your computer to improve your computer's ability to understand your voice. Doing this isn't necessary, but can help improve dictation accuracy.

Open the Speech Reference Card
View and print a list of common commands to keep with you so you always know what to say.

If you would like to learn more about speech related tools and support from Microsoft, please visit the Microsoft Speech Online Community.

1 Set Up Microphone wizard

2 Speech Recognition Tutorial

3 Voice Training Tutorial

Figure 4.14

The Speech Recognition main menu.

I'm an old hand at speech recognition, having experimented with Dragon Naturally Speaking, IBM Via Voice, and other products over the last few years, and I'm impressed at how well Speech Recognition works. Give it a try, and see if you can't also give your wrists and fingers a rest!

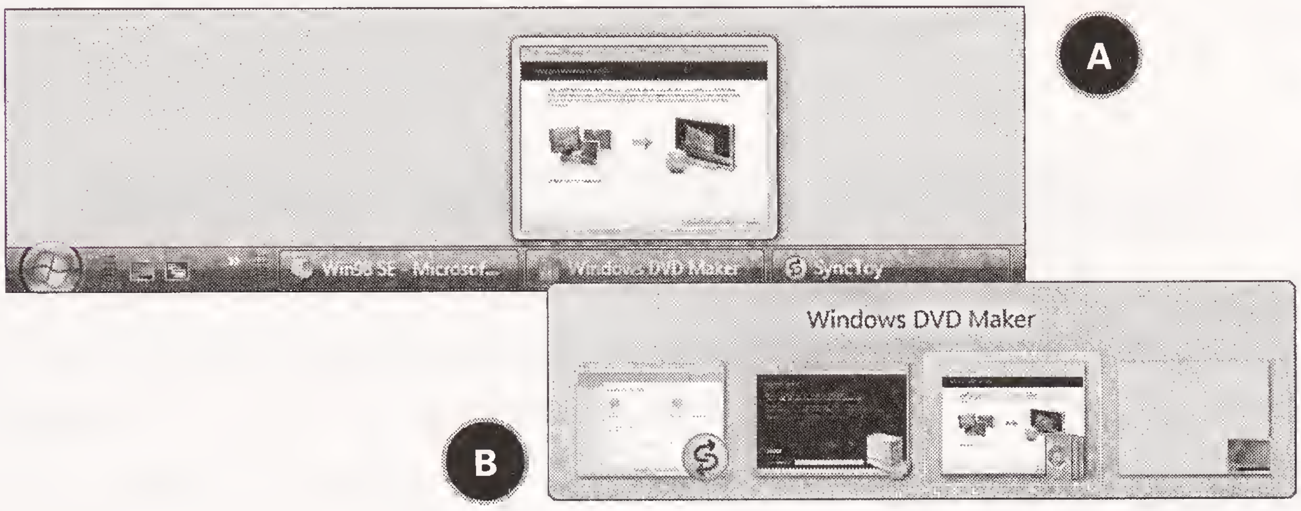
Feature Rating: ***Speech Recognition***

Moving Between Open Programs

You can move between open programs in three ways with Vista. Clicking the Taskbar icon and using the Alt+Tab key combination have been enhanced in Windows Vista, whereas the Win+Tab key combination is brand new:

- Select a program icon in the Taskbar—When you move your mouse over a program icon in the Taskbar, Windows Vista now displays a thumbnail of the program's active screen (Figure 4.15 A), making it easier than ever to select the right program.
- Press the Alt+Tab keys—When you use Alt+Tab in Windows Vista to move between programs, a thumbnail of each program appears in

the center of the screen. The currently selected program has a colored border around it and displays its title above the thumbnails (see Figure 4.15 B).


A
Win98 SE - Microsof...
Windows DVD Maker
SyncToy
Windows DVD Maker
B

A Displaying a live thumbnail icon.

B Using Alt-Tab.

Figure 4.15

Working with open programs.

- Press the Win+Tab keys—With the default Aero interface enabled, hold down the Win key and press Tab to display a brand-new way to view active programs: in 3D! As you cycle through the programs, each program is moved to the front of the stack (see Figure 4.16). If you've been clinging to an old, pre-Windows key keyboard, maybe now you'll find a reason to upgrade!

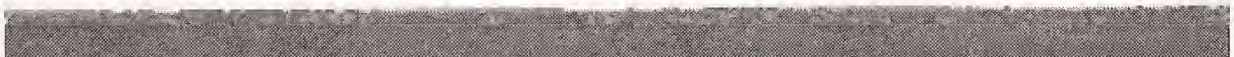

Share your memories on a DVD
Win98 SE - Microsof...
Windows DVD Maker
SyncToy

Figure 4.16

Using Win+Tab to cycle through active programs in 3D with Aero.

Thanks to live thumbnails in Alt+Tab and mouseovers, you can find the right window faster. And, if you want to see the "big picture," Flip 3D makes it easy (and fun!) to find the right program.

Feature Rating: ***Program Switching***

Sleep, Shutdown, and Other Options

As you've probably figured out by now, the designers behind Windows Vista like to take familiar features we've grown noddingly familiar with since Windows 95 and NT 4.0 and pull a switcheroo, changing how they work and adding some extra goodies along the way. It should be no surprise, then, that the "menu formerly known as shutdown" has added a few features and changed the meaning of familiar icons.

For starters, clicking on the button formerly known as the Power button now puts the system into Sleep mode instead of Shutdown as in Windows XP. Apparently, Microsoft figures that you'll save time by not booting the system from a cold start, but if you click it and reach inside your system for a quick cable check or memory upgrade, be warned! The system is still live, and any cables or components you plug in or disconnect could get zapped. You can redefine the Power button to shut down the system or go into hibernate mode, but it requires a detour into the Control Panel's Power Options dialog (select Change When Computer Sleeps, select Change Advanced Power Settings to open Edit Plan Settings, select Power Buttons and Lid, and then select Start Menu Power Button) before you can choose another option. Whew! That's a lot of work to change a misguided default.

The Lock icon locks the system, even before your screensaver kicks in. Use it to secure your system immediately. Enter your password to bring your system out of Locked mode.

Click the right arrow next to the Lock button on the Start menu to bring up a list of shutdown and log off options. As you might expect, our old friends Sleep and Lock are there, and finally Hibernate and Shut Down make an appearance, along with Restart, Switch User, and Log Off. This arrangement is easier in a way than Windows XP, but, like so much else in Windows Vista, it might take a bit of getting used to.

You can also use the shutdown command from the command line to log off, shut down, shut down and restart, and perform other shutdown options on the local or specified remote computers.

While it's great to see Hibernate finally available without a "secret handshake," Microsoft's redefining the Power button icon as Sleep instead of Shutdown by default could cause problems for some users. How many fried memory modules or hard disks will result?

👎 *Feature Rating:* ***Shutdown Options***

User Interface Best Practices

With so much customization available in the user interface, you'll want to follow these practices to stay out of trouble:

- Use System Restore to create a restore point that "locks in" your current settings for all user interface and accessory settings before you modify them. This gives you an easy way to reverse all settings if you mangle your desktop.

➪ To learn more about System Restore, see " Using System Restore," Chapter 15, p. 381.

- If you don't use different user accounts on shared systems, shame on you! Even if you're working at home or in some other "trust-based" environment, the problems that secondary users can cause your user interface and accessory settings alone justify the effort needed to set up user accounts and make your spouse, kids, or assistant log in. That way, they can foul up their own desktops without disturbing yours. For details, see "Managing User Accounts and Family Safety," Chapter 14, p. 329.
- Make sure you're using the latest stable graphics and audio drivers. Bad drivers can lead to problems in configuring display settings and speech recognition.
- Take time to train your system if you want to use speech recognition. Although the Microsoft engine does fairly well without training, you can save yourself a lot of time and frustration by using the tutorial and additional training opportunities provided.
- Practice undoing custom settings when this option is available. If you can't undo a setting (such as icon spacing or other customizations to the Classic Windows desktop), create a restore point before you experiment.
- Don't assume that the Windows Vista user interface or a particular accessory works the way its counterpart in Windows XP works. Check out the differences!

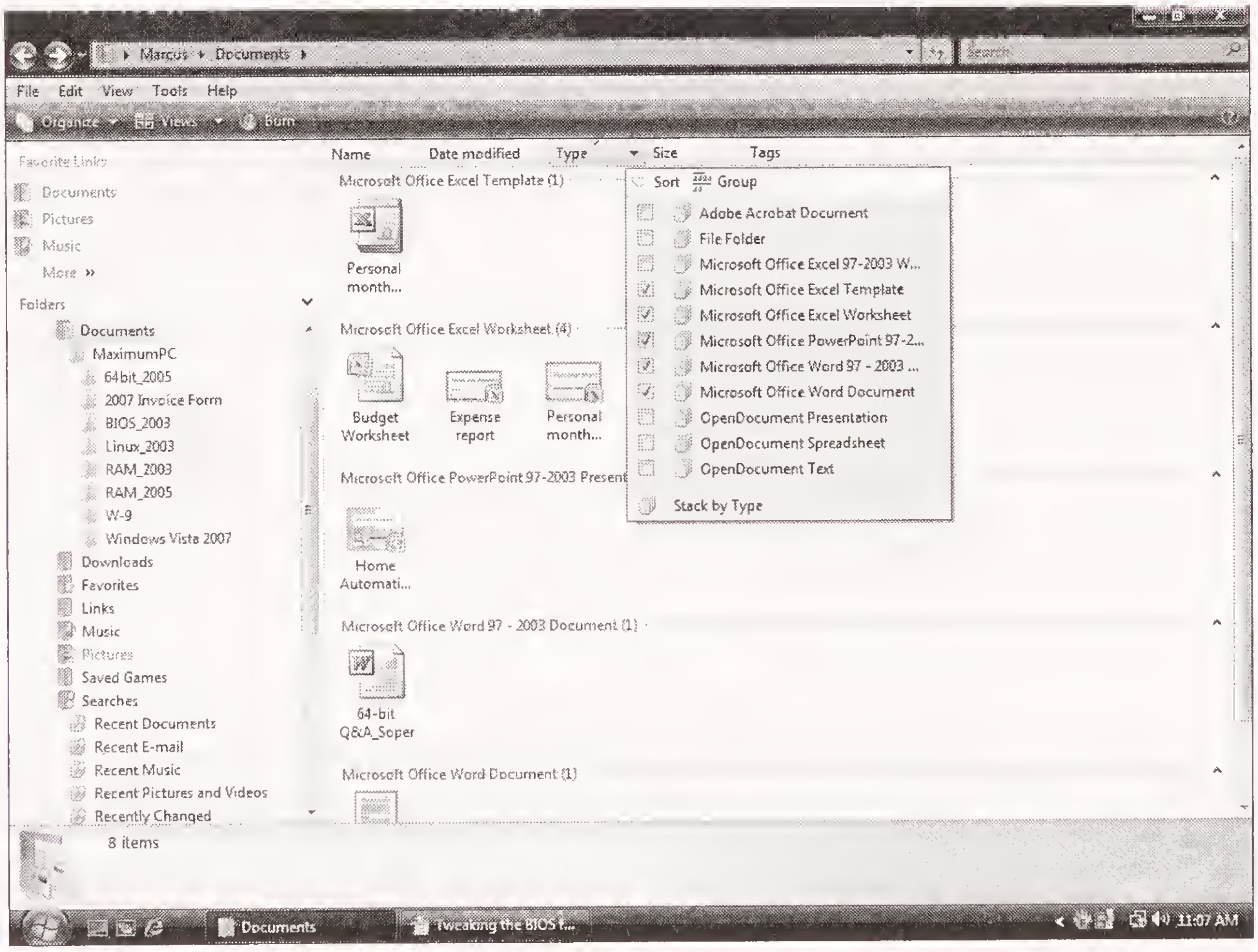
Chapter Five

Vista Tools for Faster and Better File Organization

IN THIS CHAPTER

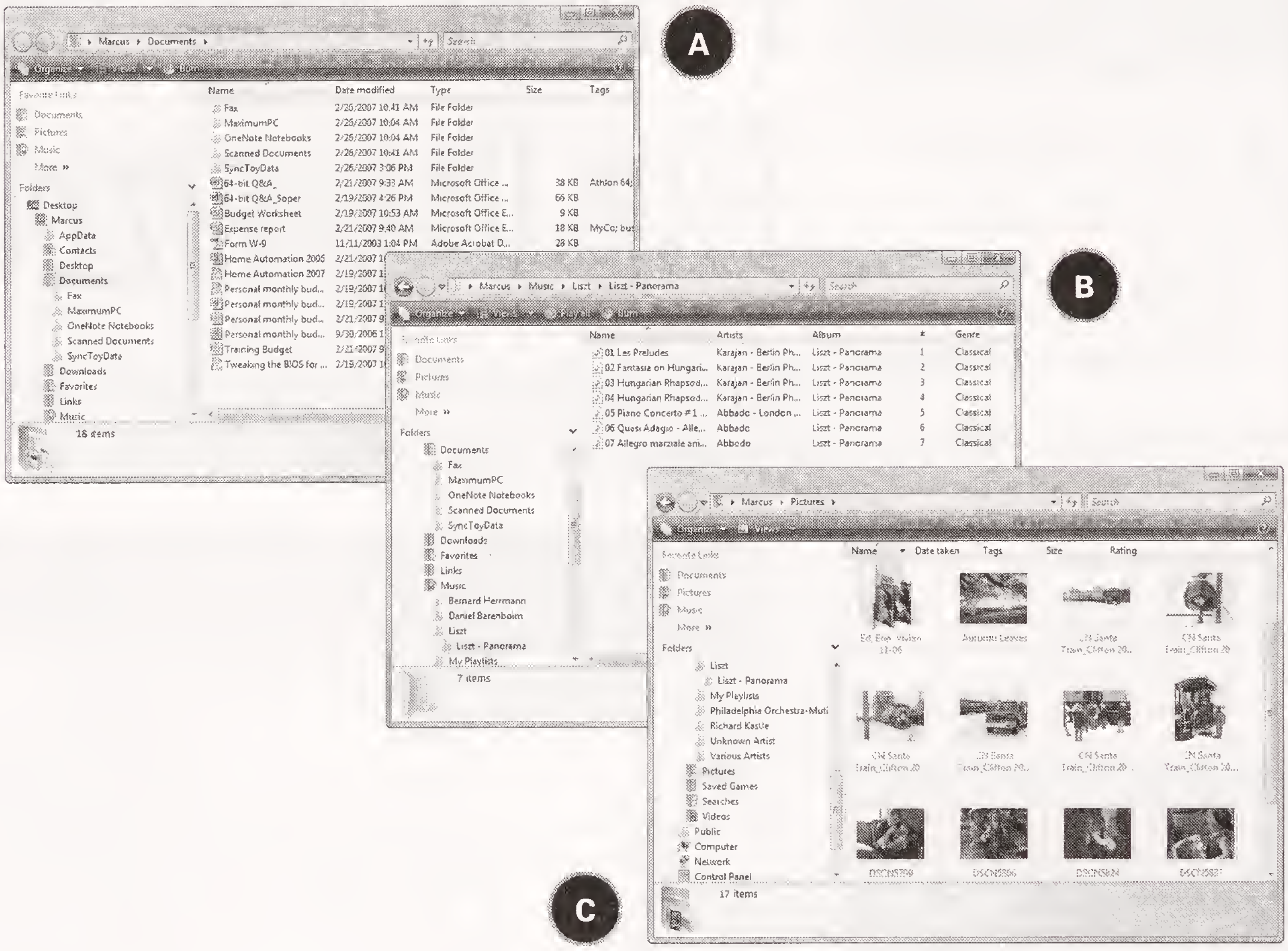
- Take Control of Your Data with Windows Vista's Revamped Explorers
- Using Explorers
- Using Saved Searches
- File Management Tips and Tricks

Take Control of Your Data with Windows Vista's Revamped Explorers


Marcus ▸ Documents ▸
Search
File Edit View Tools Help
Organize Views Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Documents
MaximumPC
64bit_2005
2007 Invoice Form
BIOS_2003
Linux_2003
RAM_2003
RAM_2005
W-9
Windows Vista 2007
Downloads
Favorites
Links
Music
Pictures
Saved Games
Searches
Recent Documents
Recent E-mail
Recent Music
Recent Pictures and Videos
Recently Changed
Name
Date modified
Type
Size
Tags
Microsoft Office Excel Template (1)
Personal month...
Microsoft Office Excel Worksheet (4)
Budget Worksheet
Expense report
Personal month...
Microsoft Office PowerPoint 97-2003 Present
Home Automati...
Microsoft Office Word 97 - 2003 Document (1)
64-bit Q&A_Soper
Microsoft Office Word Document (1)
Sort
Group
☐ Adobe Acrobat Document
☐ File Folder
☐ Microsoft Office Excel 97-2003 W...
☑ Microsoft Office Excel Template
☑ Microsoft Office Excel Worksheet
☑ Microsoft Office PowerPoint 97-2...
☑ Microsoft Office Word 97 - 2003 ...
☑ Microsoft Office Word Document
☐ OpenDocument Presentation
☐ OpenDocument Spreadsheet
☐ OpenDocument Text
Stack by Type
8 items
Documents
Tweaking the BIOS f...
11:07 AM

When you log in to Windows Vista and open your Start menu, you can go directly to your letters, spreadsheets, or presentations by clicking Documents (see Figure 5.1 A); to your MP3 and WMA collection by clicking Music (see Figure 5.1 B); or to your digital photos by clicking Pictures (see Figure 5.1 C).

Although these links might seem to be little more than warmed-over versions of the old My Documents, My Pictures, and My Music folders from Windows XP, they actually open explorer windows customized with the features you're most likely to need, while also providing the capability to instantly navigate to any other folder with a single click. If you think "Classic Windows Explorer Meets Windows XP Task Pane," you're getting the idea.



A Documents

B Music

C Pictures

Figure 5.1

Various Explorer windows.

The current user's explorer (see Figure 5.2), which you open by clicking your username on the Start menu, provides top-level access to other explorers that are not available from the Start menu:

- Contacts
- Favorites
- Saved Games
- Videos
- Desktop

- Downloads
- Links
- Searches

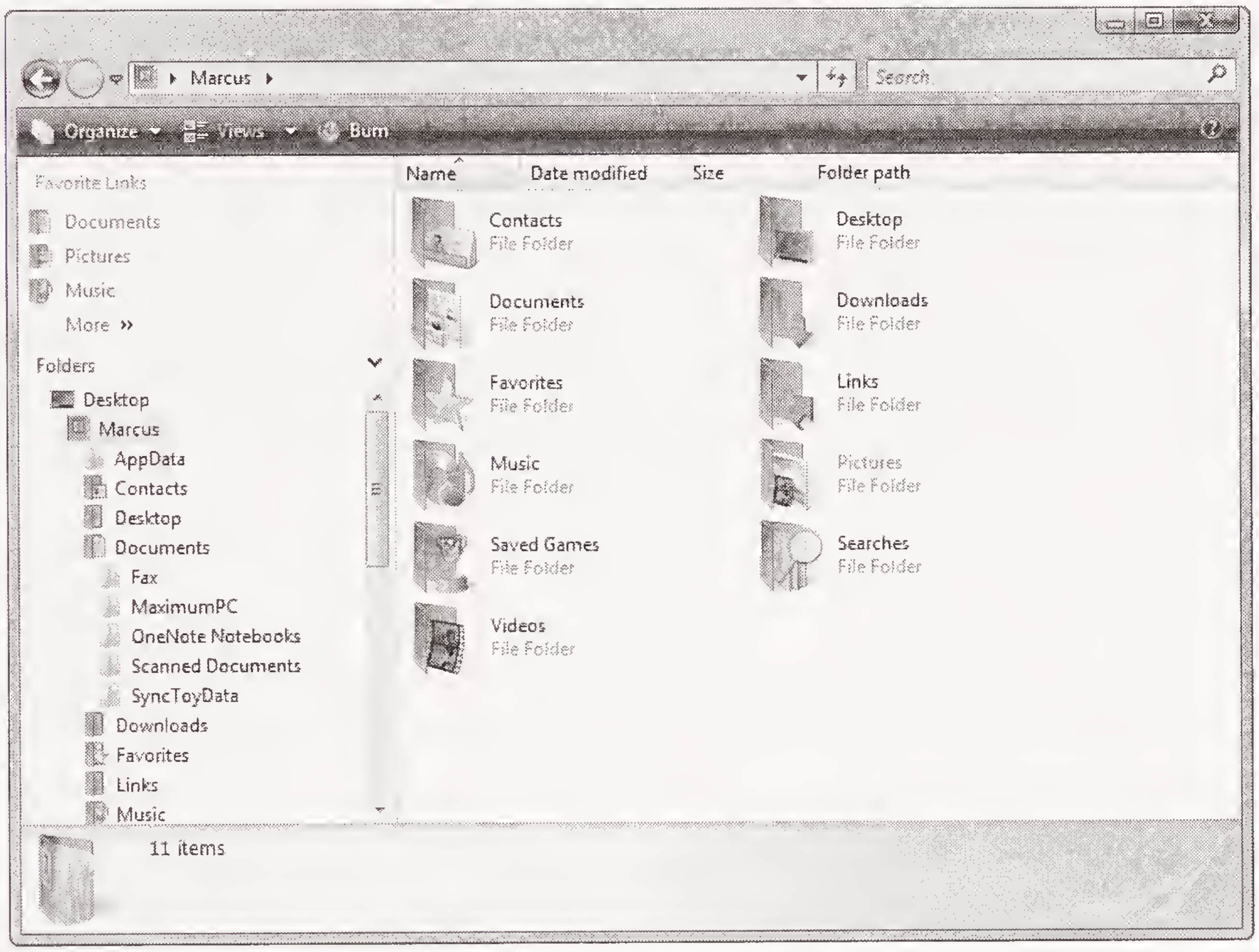

Marcus
Search
Organize
Views
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Desktop
Marcus
AppData
Contacts
Desktop
Documents
Fax
MaximumPC
OneNote Notebooks
Scanned Documents
SyncToyData
Downloads
Favorites
Links
Music
Name
Date modified
Size
Folder path
Contacts
File Folder
Desktop
File Folder
Documents
File Folder
Downloads
File Folder
Favorites
File Folder
Links
File Folder
Music
File Folder
Pictures
File Folder
Saved Games
File Folder
Searches
File Folder
Videos
File Folder
11 items

Figure 5.2

Open the current user's explorer to access other customized explorer windows.

In the following sections, we'll dig deeper into these customized views. As we do, you'll see how much easier Windows Vista makes it to keep track of the features that make your PC really personal, and you'll learn what features still need work.

Inside Vista's User Folders

In Windows XP, each user's My Documents folder was an alias for C:\Documents and Settings\user. To make matters more complicated, other folders such as My Pictures, My Music, and My Downloads were subfolders of My Documents. Windows Vista, on the other hand, is much more straightforward:

- The Users folder contains a folder for each user. For example, C:\Users\Marcus.

- Each user's folder contains separate folders for documents, pictures, music, and other user-specific items. Folders for pictures, music, and downloads are no longer nested inside the user's documents folder, so you click less to get where you're going.

Sure, Windows Vista's way is easier than Windows XP's, but there's also a second, subtler benefit: You can use longer filenames. Don't believe it? Let's do the math. Although everyone likes to *say* that 32-bit Windows versions (Windows 95 and later) support up to 255-character filenames, that's never really been true. The full path (including the filename) can be up to 255 characters. It might seem as if you'd never get anywhere near that limit, but Windows XP's clumsy folder structure puts more strain on the limit than you might imagine.

For example, the folder path `C:\Documents and Settings\Marcus\My Documents\My Pictures\Clifton Summer 2005\` contains 78 characters. But, in Windows Vista, the comparable folder path would look like this: C:\Users\Marcus\Pictures\Clifton Summer 2005\ and use only 45 characters.

Limiting the size of the folder path is especially important if you are trying to make Windows-compatible CDs using the Joliet file system. Joliet has a limit of only 128 characters, and thus Windows Vista's shorter pathnames make it less likely that you'll get a message that you must shorten a filename the next time you burn a data disc.

TIP

By default, Windows Documents Explorer (and other explorers) display the Navigation pane and the Details pane. If you prefer an uncluttered screen with more room to display your files, click Organize, Layout, and unselect the Details and Navigation panes. Repeat this operation to restore these panes.

Using Explorers

All explorers in Windows Vista have some common features:

- The "breadcrumb" navigation structure at the top of the dialog makes it easy to navigate to another folder
- The Favorite Links pane provides links to the most popular explorers, as well as Recently Changed (files), Searches, and the shared Public folder.

Windows Vista explorers use a taskbar located below the Navigation pane. Available task options vary according to whether you have a file, a folder, or nothing selected, and also by the explorer in use.

Using the Documents Explorer

The Documents Explorer is listed first for a reason: it's probably the explorer you use most often. Table 5.1 lists the tasks you can perform in the Documents Explorer.

Table 5.1 Available Tasks in Documents Explorer

Available Tasks	No File or Folder Selected	File Selected	Folder Selected
Organize (menu)	Yes	Yes	Yes
Views (menu)	Yes	Yes	Yes
Open (menu)	No	Yes	Yes
Print	No	Yes	No
Explore	No	No	Yes
E-mail	No	Yes	Yes
Share	No	Yes	Yes
Burn*	Yes	Yes	Yes

***If you don't have a rewritable CD or DVD drive, no Burn task for you!**

Using the Pictures Explorer

The Pictures Explorer shares many features with the Documents Explorer, including the Organize and Views menus, the CD/DVD Burn Wizard, the Preview pane, and the Name and Size views. It also adds a boatload of image-specific features to make working with digital photos, scanned pictures, and other types of digital images a lot easier. These features include

- Slide Show
- Preview
- Date Taken view
- Rating view
- Enhanced tag and metadata display features

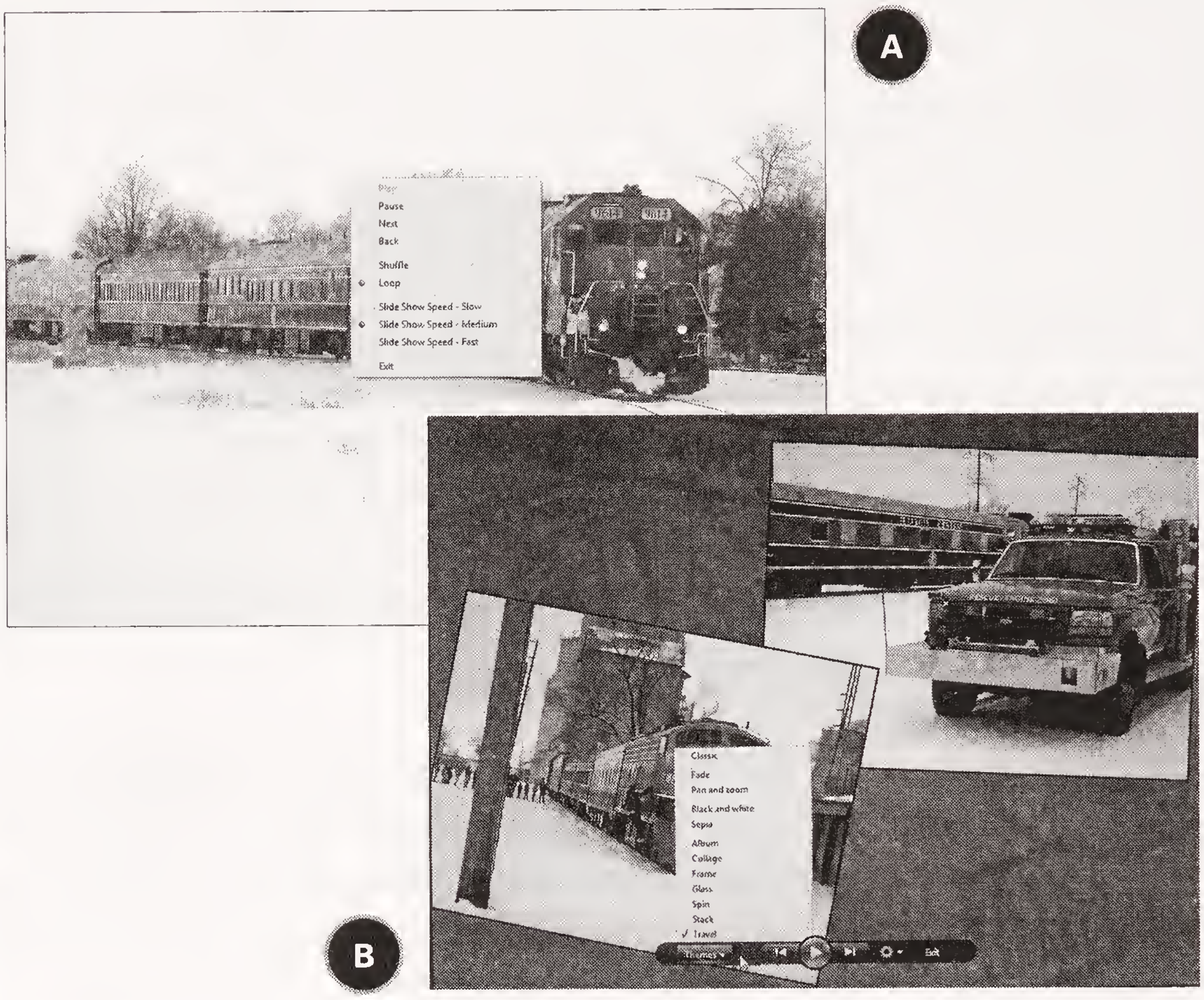
TIP

Do you prefer to use the Windows XP–style Explorer menus (File, Edit, View, Tools)? Click Organize, select Layout, and select Menu Bar. You can use either the Windows XP–style or Vista menus as desired. To send the menu bar back to XP–Land, repeat the same process.

Using Slide Show

The Slide Show feature provides a simple way to preview the photos in a particular folder. Select the first slide in the folder, click Slide Show, and the show starts (see Figure 5.3 A). Systems with a Windows Experience Index graphics (Aero) score of 3.0 or higher provide a deluxe DirectX-based slideshow (see Figure 5.3 B) with support for themes and special effects, including black and white or sepia effects as well as pan and zoom transitions (the so-called "Ken Burns effect"). The Photos screen saver uses the same options available in the Pictures Explorer slideshow.

➪ To learn more about the Windows Experience Index, see "Performance Information and Tools," Chapter 6, p. 129.


A
Play
Pause
Next
Back
Shuffle
● Loop
Slide Show Speed - Slow
● Slide Show Speed - Medium
Slide Show Speed - Fast
Exit
B
Classic
Fade
Pan and zoom
Black and white
Sepia
Album
Collage
Frame
Glass
Spin
Stack
✓ Travel
Themes
Exit

A Basic version.

B Deluxe DirectX-based version offers a variety of appearance options.

Figure 5.3

Windows Vista slideshows.

➪ To learn more about Display Settings, see "Personalizing Your Desktop," Chapter 4, p. 85.

Feature Rating: ***Slide Show***

TIP

Unfortunately, Windows Vista plays slideshows on the primary display only, even if you have dragged Pictures Explorer or Windows Photo Gallery to an additional display.

If you'd rather play your slideshow on your secondary display, you can use the Personalize menu's Display Settings option to temporarily switch the primary monitor designation to a secondary display. When you run the slideshow, it plays on whatever monitor you have designated as the primary monitor. When you're finished, go back into Display Settings and change back to your normal primary display.

Previewing and Printing Photos

Click the Preview button to open the selected photo in Windows Photo Gallery. You can use Windows Photo Gallery to add tags, add captions, fix problems such as color or red-eye, and create a slideshow.

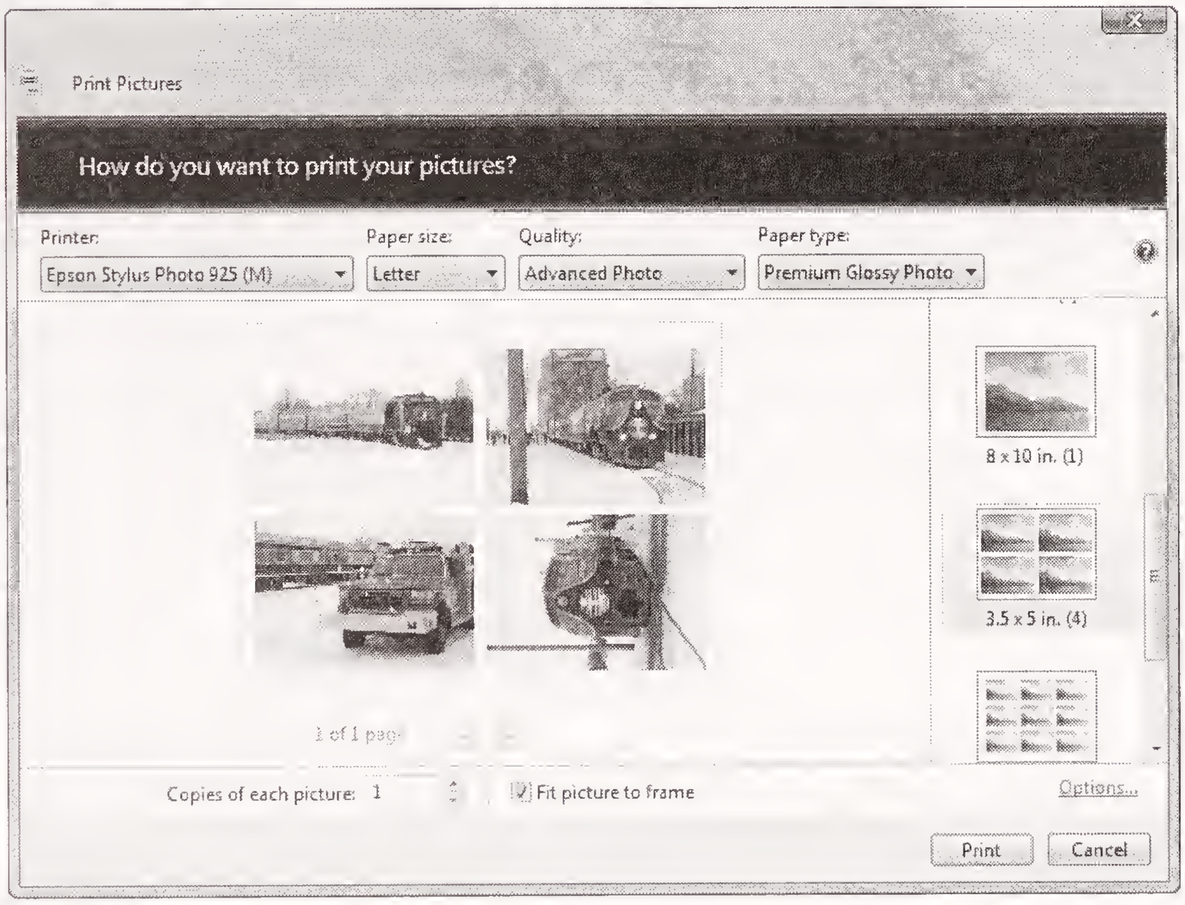
➪ To learn more about editing and viewing pictures with the Windows Photo Gallery, see "Using Windows Photo Gallery," Chapter 9, p. 239.

Need some prints of your favorite photos? Select them, click the Print button, and the new and definitely improved Print Pictures dialog appears. Although a few traces of its predecessor, the Windows XP Photo Printing Wizard, are visible (mainly in the capability to print multiple images on a sheet), Windows Vista dumps the wizard for a clean, streamlined interface that puts your main choices in a single dialog (see Figure 5.4).

If you're not satisfied with print quality or need to change other settings, click Options to change sharpening or printer-specific options on the Print Settings dialog. From this dialog, click Printer Properties to choose additional settings not visible in the main dialog, such as photo enhancement, paper layout, rotation, mirror image (handy for window decals or iron-on transfers), and others, depending on your printer.

TIP

If you prefer to open your picture with a different program, just select a photo and click the down arrow next to Preview to select a different program. The programs you'll see depend on the imaging programs installed on your system, but you'll always have at least Microsoft Paint (ugh!) and Windows Photo Gallery to choose from.



Print Pictures

How do you want to print your pictures?

Printer: Epson Stylus Photo 925 (M)

Paper size: Letter

Quality: Advanced Photo

Paper type: Premium Glossy Photo

Copies of each picture: 1

☑ Fit picture to frame

Figure 5.4

Preparing to print a sheet of photos with Windows Vista's Print Photos feature.

Feature Rating: ***Printing Photos***

Using the Music Explorer

Windows Vista's Music Explorer defaults to the Details view, which shows the name of each song, artist, album, track number, genre, and rating.

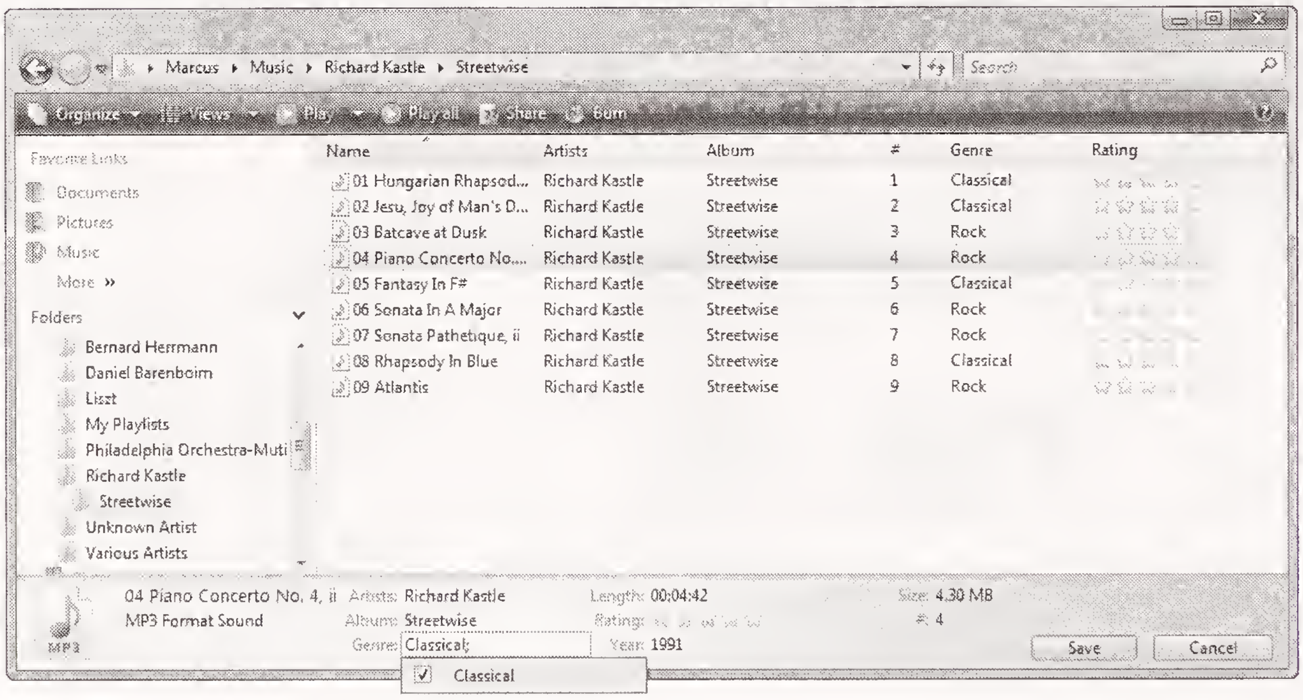
TIP

To switch to another digital music program for playing a particular song, right-click the song, select Properties, click the Change button on the General tab, and select the program you prefer.

The Details pane displays additional information, including the audio file type, date, and size on disk.

As you might expect, Music Explorer is tightly integrated with Windows Media Player: The right-click menu features an option to add the selected track to a playlist in Windows Media Player, and selecting Play or Play All from the Actions menu plays the current song or folder with Windows Media Player. Ratings created with Windows Media Player (either created by the user or automatically assigned by frequency of playback) are displayed in Music Explorer.

However, you don't need to jump over to Windows Media Player to edit this information: You can edit rating, artist, genre, year, and track number by using the Details pane (see Figure 5.5). To edit or add additional information about a song, open its properties sheet, click the Details tab, and make changes as needed. You can sort or group songs by name, artist, album, genre, and rating.


Marcus ▸ Music ▸ Richard Kastle ▸ Streetwise
Search
Organize
Views
Play
Play all
Share
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Bernard Herrmann
Daniel Barenboim
Liszt
My Playlists
Philadelphia Orchestra-Muti
Richard Kastle
Streetwise
Unknown Artist
Various Artists
MP3
Save
Cancel

Name	Artists	Album	#	Genre	Rating
01 Hungarian Rhapsod...	Richard Kastle	Streetwise	1	Classical	
02 Jesu, Joy of Man's D...	Richard Kastle	Streetwise	2	Classical	
03 Batcave at Dusk	Richard Kastle	Streetwise	3	Rock	
04 Piano Concerto No....	Richard Kastle	Streetwise	4	Rock	
05 Fantasy In F#	Richard Kastle	Streetwise	5	Classical	
06 Sonata In A Major	Richard Kastle	Streetwise	6	Rock	
07 Sonata Pathetique, ii	Richard Kastle	Streetwise	7	Rock	
08 Rhapsody In Blue	Richard Kastle	Streetwise	8	Classical	
09 Atlantis	Richard Kastle	Streetwise	9	Rock	

04 Piano Concerto No. 4, ii
MP3 Format Sound
Artists: Richard Kastle
Album: Streetwise
Genre: Classical;
☑ Classical
Length: 00:04:42
Rating:
Year: 1991
Size: 4.30 MB
#: 4

Figure 5.5

Editing song information with the Details pane in Music Explorer.

Feature Rating: ***Music Explorer***

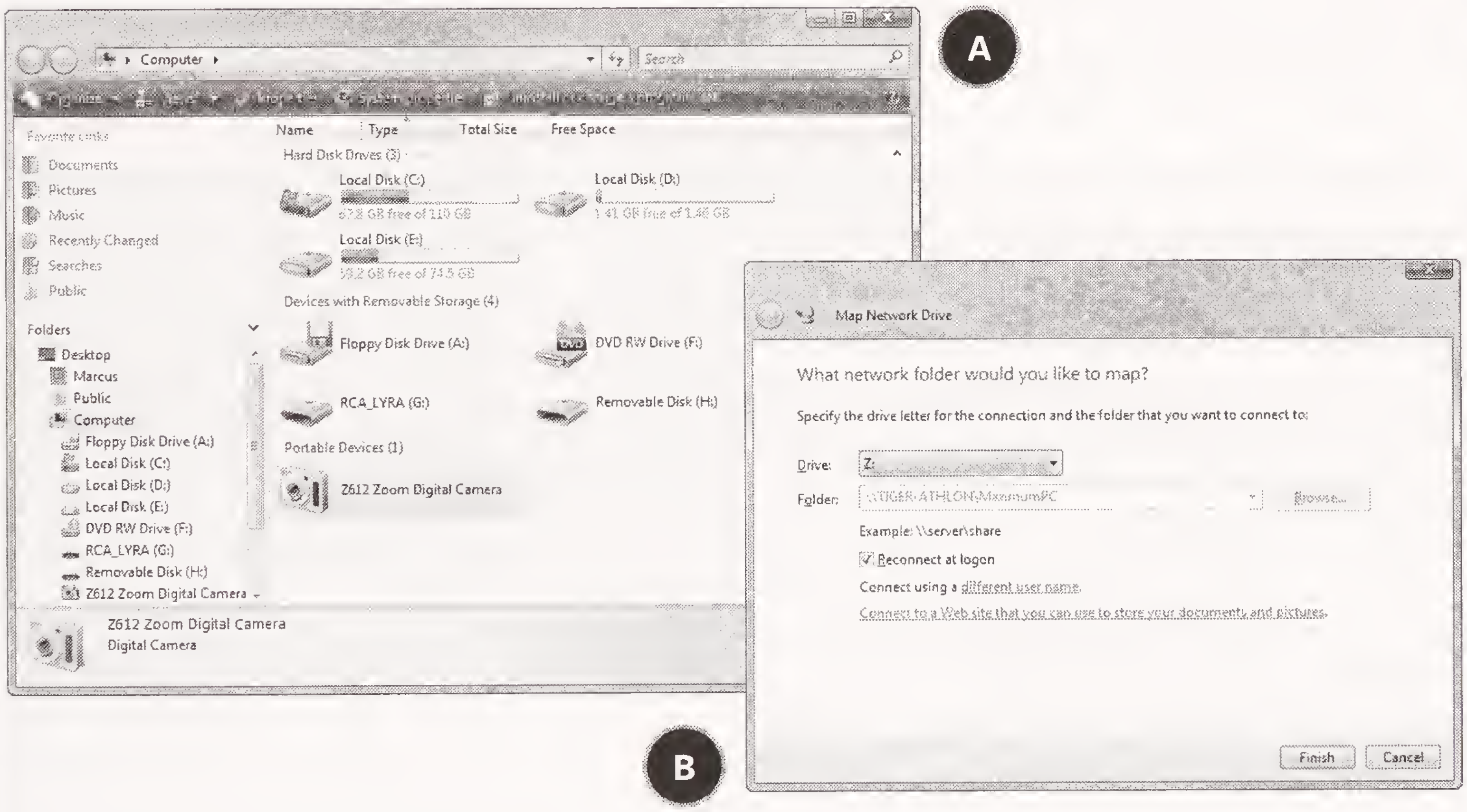
Using Computer Explorer

Computer Explorer (see Figure 5.6) is Windows Vista's replacement for the venerable My Computer display of drives and other devices that store information, such as digital cameras and digital media players.

As with other explorers, Computer Explorer displays favorite links in the upper left-hand corner, directly above the Folders portion of the Navigation pane. It defaults to the Tiles view, and its Organize menu provides the same mix of viewing and editing options as in other explorers.

However, it also offers a widely different feature set than other explorers. If no drive or device is selected, action buttons include the following:

- System Properties—Opens Control Panel–System and Maintenance–System
- Uninstall or Change a Program—Opens Control Panel–Programs and Features
- Map Network Drive—Opens the Map Network Drive dialog
- Open Control Panel—Opens Control Panel in its default category view


A
B
Computer
Search
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Desktop
Marcus
Public
Computer
Floppy Disk Drive (A:)
Local Disk (C:)
Local Disk (D:)
Local Disk (E:)
DVD RW Drive (F:)
RCA_LYRA (G:)
Removable Disk (H:)
Z612 Zoom Digital Camera
Name
Type
Total Size
Free Space
Hard Disk Drives (3)
Local Disk (C:)
67.8 GB free of 110 GB
Local Disk (D:)
1.41 GB free of 1.46 GB
Local Disk (E:)
59.2 GB free of 74.5 GB
Devices with Removable Storage (4)
Floppy Disk Drive (A:)
DVD RW Drive (F:)
RCA_LYRA (G:)
Removable Disk (H:)
Portable Devices (1)
Z612 Zoom Digital Camera
Z612 Zoom Digital Camera
Digital Camera
Map Network Drive
Browse...
Finish
Cancel

What network folder would you like to map?

Specify the drive letter for the connection and the folder that you want to connect to:

Drive: Z:

Folder: \\TIGER-ATHLON\MaximumPC

Example: \\server\share

☑ Reconnect at logon

Connect using a different user name.

Connect to a Web site that you can use to store your documents and pictures.

A Viewing local devices

B Mapping a shared folder to a drive letter.

Figure 5.6

Using Computer Explorer.

When you select a drive or other storage, the available actions change. Additional actions (depending on the drive/device type and whether media is loaded) include

- Properties—Displays the General tab of the drive's properties sheet
- AutoPlay—Displays the drive's AutoPlay menu (contents vary according to the media types on the drive)
- Eject—Ejects drive or media in removable-media drive
- Burn to Disc—Burns contents of drive or media to a CD or DVD

- For more about using System properties, see “System,” Chapter 6, p. 125.
- To learn more about mapping drive letters to network shares, see Chapter 12, “Building a Home Network the Windows Vista Way.”
- Control Panel’s many features are covered in Chapter 6, “Mastering Your Hardware and Environment with Vista.”
- Configuring AutoPlay is covered in “AutoPlay,” Chapter 6, p. 139.
- To see how AutoPlay works with various types of media, see Chapter 9, “Windows Media Center the Vista Way.”

Using Other Explorers

To open other explorers, click the username in the address bar and select the explorer you want use from the list of explorers in the main pane. Table 5.2 summarizes the features of other explorers.

Table 5.2 Features of Other Explorers

Explorer	Uses	Default View	Special Features
Contacts	Lists name, email address, business and home phone for each contact	Details	New Contact, New Contact Group, Import, Export actions
Desktop	Lists desktop objects	Details	Same features as Documents Explorer
Downloads	Lists downloaded files and programs	Details	Same features as Documents Explorer
Favorites	Lists favorites used by Internet Explorer 7	Details	Same features as Documents Explorer
Shortcuts	Shortcuts to most popular explorers and predefined searches	Details	Same features as Documents Explorer
Saved Games	Lists games saved from Game Explorer	Details	Same features as Documents Explorer
Searches	Lists predefined and user-defined searches	Details	Same features as Documents Explorer
Videos	Lists videos	Large icons	Same features as Pictures Explorer

➪ To learn more about creating and using contacts, see Chapter 7, "Managing Your Contacts with Vista."

➪ To learn more about creating and managing favorites with Internet Explorer 7, see Chapter 11, "Internet the Windows Vista Way."

➪ To learn more about using games included with Windows Vista, see Chapter 10, "Gaming with Windows Vista."

➪ To learn more about creating and recording videos, see Chapter 9, "Windows Media Center the Vista Way."

Working with Organize, Views, and Open Menus

You can customize how any explorer works by adjusting settings in the Organize, Views, and Open menus. The Organize menu combines the functions of the File and Edit menus in older versions of Windows Explorer and includes options to create a new folder; cut, copy or paste the selected folder or file; undo and redo; select all files and folders shown; configure the panes available in Explorer; adjust folder and search options; delete or rename the selected file or folder; view or remove properties; close the Explorer window.

The Views menu features a slider control providing seven options for displaying files and folders, from Extra Large Icons through Tiles. Extra Large, Large, and Medium icons display thumbnail views of some document types (you may need to select the Save Thumbnail checkbox when you save documents to generate a thumbnail). Other views are similar to those used in Windows XP.

Use the Open menu to select a program different from the default program to open a particular file. For example, both Microsoft Word 2007 and OpenOffice 2.1 can open a .doc file, but you can choose only one of these programs as the default to open the file. With Open, you can select the other program on a one-time basis or choose a new program default.

Feature Rating: **Customization**

TIP

To select a different program from those listed in the Open menu, right-click the file, select Open With, and click Browse. Clear the Always Open With checkbox to make your selection temporary. Use this option to try out a different program compatible with your files, or to import a file into a program that supports the file type but normally opens other types of files.

Finding Recent Documents

If you work on many different projects like I do, you're probably fond of the My Recent Documents feature in Windows XP. Windows Vista's counterpart is Recent Items, available from the Start menu.

Windows Vista explorers also offer another option for viewing some types of recent files: the Recently Changed search available from the Favorite Links pane's Searches folder.

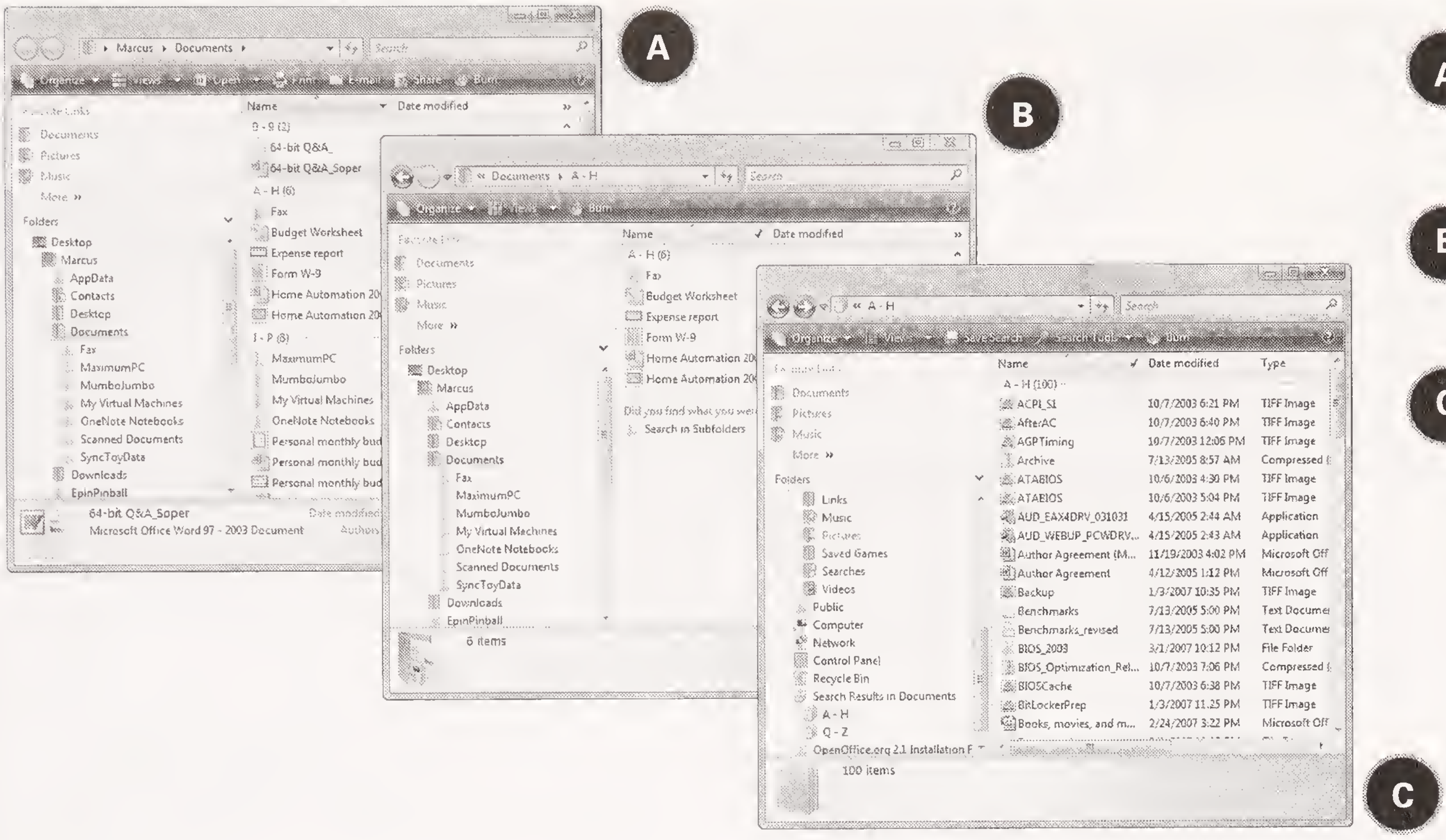
Although this is a useful search option, it's not really a replacement for the Recent Items feature on the Start menu for two reasons:

- Recently Changed lists only files you have recently created or changed. If you frequently view a file for reference, but don't change it, it will not be listed in the Recently Changed search window. Documents you open frequently, whether you change them or not, are listed in Recent Items.
- Recently Changed relies on the Windows Vista index system. File types that are not indexed, such as OpenOffice documents, or locations that are not indexed will not be displayed in Recently Changed, although they will show up in Recent Items.

👎 *Feature Rating:* ***Recently Changed Search***

Sorting, Grouping, and Filtering Documents

You can sort and group documents by name, by date modified, by type, by size, and by tags. Although the first four categories sound familiar, Windows Vista adds many new features to help you find the files you want even faster than before. You can sort, group, and filter files by name, date modified or date taken, type, size, tags, and ratings, depending upon the explorer in use. The Name menu provides options for sorting, grouping, and filtering files by name. Figure 5.7 A shows files grouped by name, and Figure 5.7 B shows files filtered by name. Click the Search in Subfolders link, and files in the subfolders that match the name filter are displayed (see Figure 5.7 C).



A Grouping documents by name.

B Filtering documents by name.

C Filtering contents of the subfolders by name.

Figure 5.7

Document name options.

The Date Modified view has also gone through a substantial update in Windows Vista. Click Date Modified, and a calendar appears, enabling you to view files created on a particular date, earlier in the current week, last week, or a long time ago. Click Group, and the files are grouped by these criteria (see Figure 5.8 A). Click Stack by Date Modified and hover your mouse over each stack to see the number and size of files in the current folder (and its subfolders) that match the date criteria (see Figure 5.8 B).

Use the Type view to sort or group files by type, and to filter the results by type as well. Use the check boxes to specify the file types you want to view, and the stack option makes it easy to see how many files of each type you have in the current folder and its subfolders.The Size view classifies documents into various size groups (the exact size ranges depend on the sizes of documents on your system). The Unspecified category is used for file folders.

Feature Rating: ***Sorting, Grouping, and Filtering Options***

NOTE

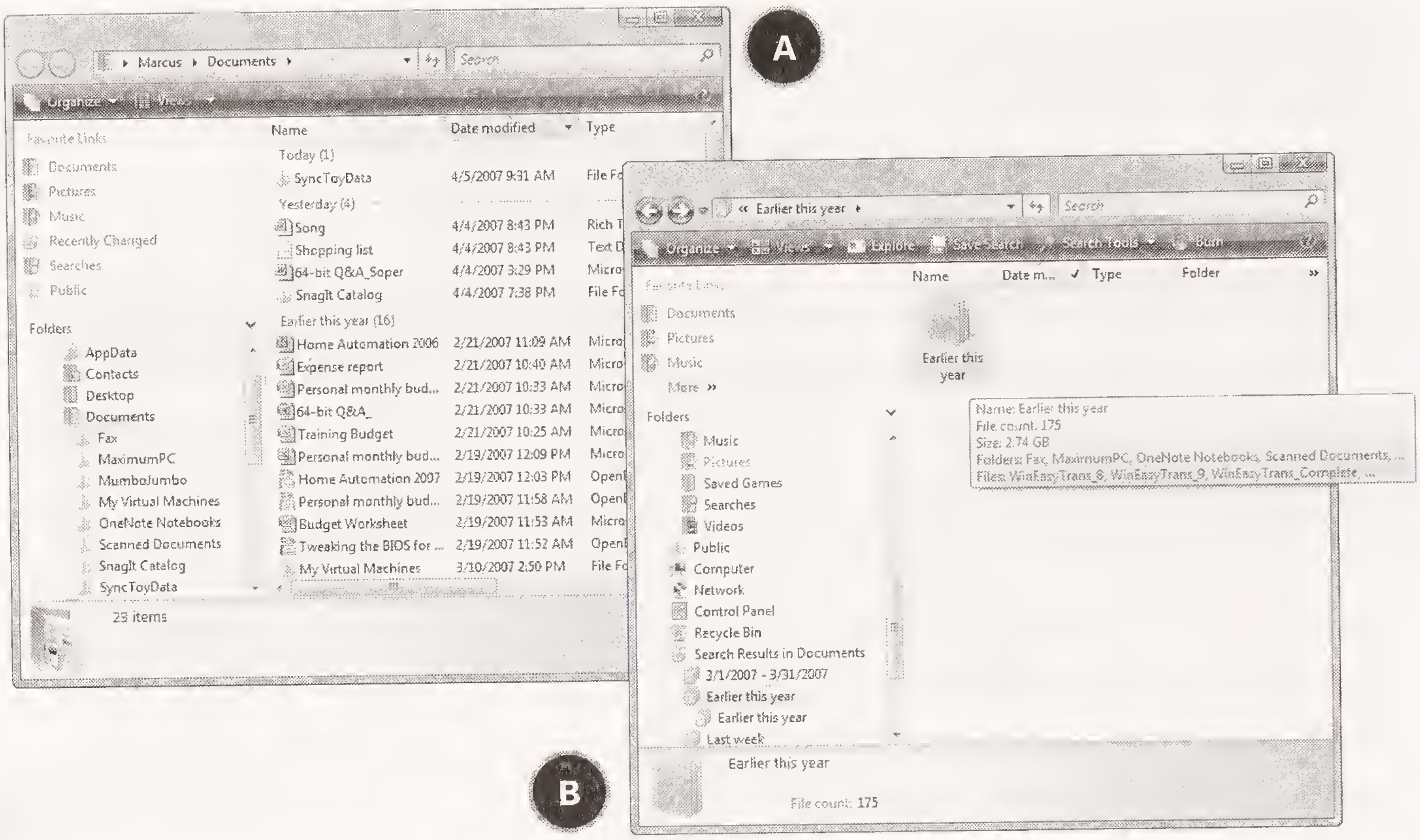
Arrows Point the Way To go back to a previous view, click the left arrow next to the address bar. To go forward, click the right arrow.

TIP

To classify files by additional criteria, right-click any column header and select criteria listed. To choose from additional criteria, select More and select the criteria you want to use. If you are using the Details view, the criteria you select will be displayed as additional columns.

A Grouping documents by date.

B Stacking documents by date.


A
B
Marcus ▸ Documents ▸
Search
Organize
Views
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
AppData
Contacts
Desktop
Documents
Fax
MaximumPC
MumboJumbo
My Virtual Machines
OneNote Notebooks
Scanned Documents
SnagIt Catalog
SyncToyData
23 items
« Earlier this year ▸
Explore
Save Search
Search Tools
Burn
Name
Date m...
Type
Folder
Earlier this year
More »
Music
Pictures
Saved Games
Searches
Videos
Public
Computer
Network
Control Panel
Recycle Bin
Search Results in Documents
3/1/2007 - 3/31/2007
Earlier this year
Earlier this year
Last week
Earlier this year
File count: 175

Name	Date modified	Type
Today (1)		
SyncToyData	4/5/2007 9:31 AM	File Fo
Yesterday (4)		
Song	4/4/2007 8:43 PM	Rich T
Shopping list	4/4/2007 8:43 PM	Text D
64-bit Q&A_Soper	4/4/2007 3:29 PM	Micro
SnagIt Catalog	4/4/2007 7:38 PM	File Fo
Earlier this year (16)		
Home Automation 2006	2/21/2007 11:09 AM	Micro
Expense report	2/21/2007 10:40 AM	Micro
Personal monthly bud...	2/21/2007 10:33 AM	Micro
64-bit Q&A_	2/21/2007 10:33 AM	Micro
Training Budget	2/21/2007 10:25 AM	Micro
Personal monthly bud...	2/19/2007 12:09 PM	Micro
Home Automation 2007	2/19/2007 12:03 PM	Open
Personal monthly bud...	2/19/2007 11:58 AM	Open
Budget Worksheet	2/19/2007 11:53 AM	Micro
Tweaking the BIOS for ...	2/19/2007 11:52 AM	Open
My Virtual Machines	3/10/2007 2:50 PM	File Fo

Name: Earlier this year
File count: 175
Size: 2.74 GB
Folders: Fax, MaximumPC, OneNote Notebooks, Scanned Documents, ...
Files: WinEasyTrans_8, WinEasyTrans_9, WinEasyTrans_Complete, ...

Figure 5.8

Using the Date Modified option.

Working with Tags and Image Metadata

You can search for documents using all types of criteria, including tags, with Vista's Instant Desktop Search feature, so it's not surprising that you can group and filter files by their tags using the Documents Explorer.

To work with your files using tags, open the Tags menu. You can group files by tags or select tags to narrow your file selections (see Figure 5.9 A). When you group files by tags, a file with multiple tags shows up in each matching tag category.

If the applications you use don't support attaching tags when you save a file, right-click the file, select Properties, and click the Details tab. If a Tags field is displayed, type in each tag you want to assign, separated by a semicolon, or select predefined tags by typing the first letter and checking the ones you want (see Figure 5.9 B).

NOTE

In this section, we've reverted to the standard view before applying groups and filters to make the differences between views as clear as possible. However, keep in mind that you can combine viewing options as desired. For example, you can use the Name filtering options along with the Type filtering options to display only Microsoft Excel worksheets starting with letters A-H. If you see a check mark next to a view option, you're filtering your view of documents.

Tags 101

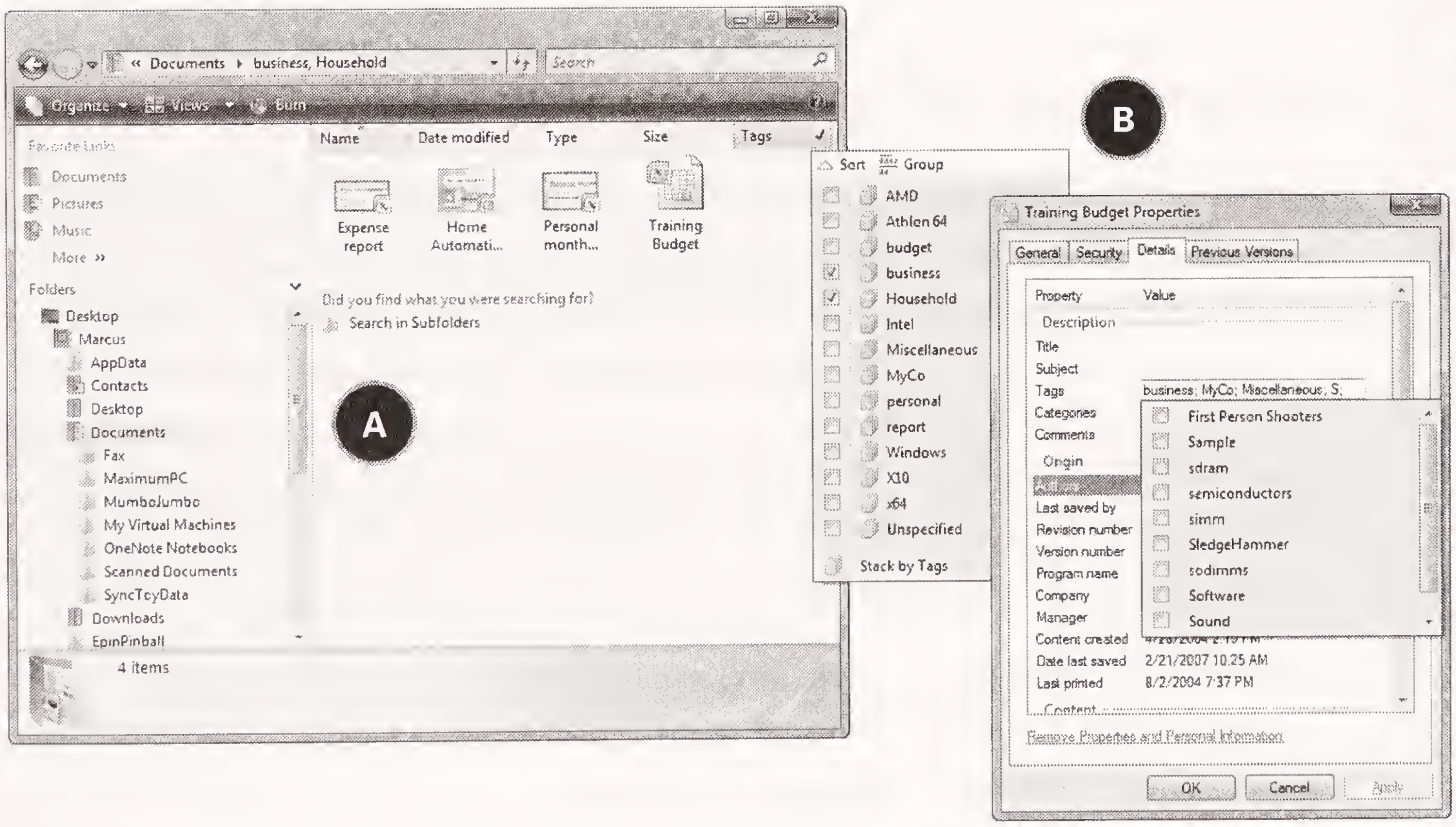
Tags have been used for some time by imaging applications such as Adobe Photoshop Album and others to classify photos by subject matter. For example, a photo of Aunt Millie and Uncle Ed at Grandpa Smith's funeral in 2005 could be tagged thus:

- Aunt Millie (she's your aunt)
- Uncle Ed (he's your uncle)
- Millie Jones (her maiden name)
- Millie Smith (her married name)
- Ed Smith (he's married to Millie)
- Grandpa Smith (he's your grandpa)
- Harrison Smith (grandpa's given name)
- Funeral
- 2005

Thus, you can look up all the photos of Millie Jones Smith by filtering for the tags "Millie Jones" and "Millie Smith."

Tagging's too good an idea to leave to the photographers, so Windows Vista supports filtering on tags created by an application or applied later.

For a good visual tutorial on how tags work in Windows Vista, see Gina Trapani's article "Geek to Live: Tag Files and Save Searches in Windows Vista" at http://lifehacker.com/.


« Documents ▸ business, Household
Search
Organize
Views
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Desktop
Marcus
AppData
Contacts
Desktop
Documents
Fax
MaximumPC
MumboJumbo
My Virtual Machines
OneNote Notebooks
Scanned Documents
SyncToyData
Downloads
EpinPinball
Name
Date modified
Type
Size
Tags
Expense report
Home Automati...
Personal month...
Training Budget
Did you find what you were searching for?
Search in Subfolders
4 items
Sort
Group
AMD
Athlon 64
budget
business
Household
Intel
Miscellaneous
MyCo
personal
report
Windows
X10
x64
Unspecified
Stack by Tags
Training Budget Properties
General
Security
Details
Previous Versions
Property
Value
Description
Title
Subject
Categories
Comments
Origin
Last saved by
Revision number
Version number
Program name
Company
Manager
Content created
Content
First Person Shooters
Sample
sdram
semiconductors
simm
SledgeHammer
sodimms
Software
Sound
Remove Properties and Personal Information
OK
Cancel
Apply
A
B

Tags business; MyCo; Miscellaneous; S;

Date last saved 2/21/2007 10:25 AM

Last printed 8/2/2004 7:37 PM

A Grouping documents by tags.

B Adding tags to a spreadsheet created with Microsoft Excel XP.

Figure 5.9

Using tags.

Tagging, Rating, and Captioning Photos

You can view existing tags and add tags to photos in Pictures Explorer with the Details pane. Enter the tags you want to assign to the Tags field. Each tag must be separated by a semicolon. Tags may originate either in Pictures Explorer or in Windows Photo Gallery.

To learn more about tagging pictures with the Windows Photo Gallery, see "Using Windows Photo Gallery," Chapter 9, p. 239.

You can also rate pictures (1–5 stars) in either Pictures Explorer or Windows Photo Gallery. To rate a picture in Pictures Explorer, drag your mouse from left to right across the rating stars you want to assign to the photo, and click the highest star.

You can also add author and comment information. Enter this information. Click Save when finished, or Cancel to discard changes. The tags and other information you provide are added to the metadata stored with the photo.

After assigning tags and ratings, you can group or filter photos by tags and ratings, as well as by date taken and size.

Feature Rating: ***Tags***

TIP

Although you can add tags to photos with Pictures Explorer, it's much faster to tag them using Windows Photo Gallery. Windows Photo Gallery's tagging feature remembers tags you create for other photos so you can select them for new photos. It's a better way to tag!

TIP

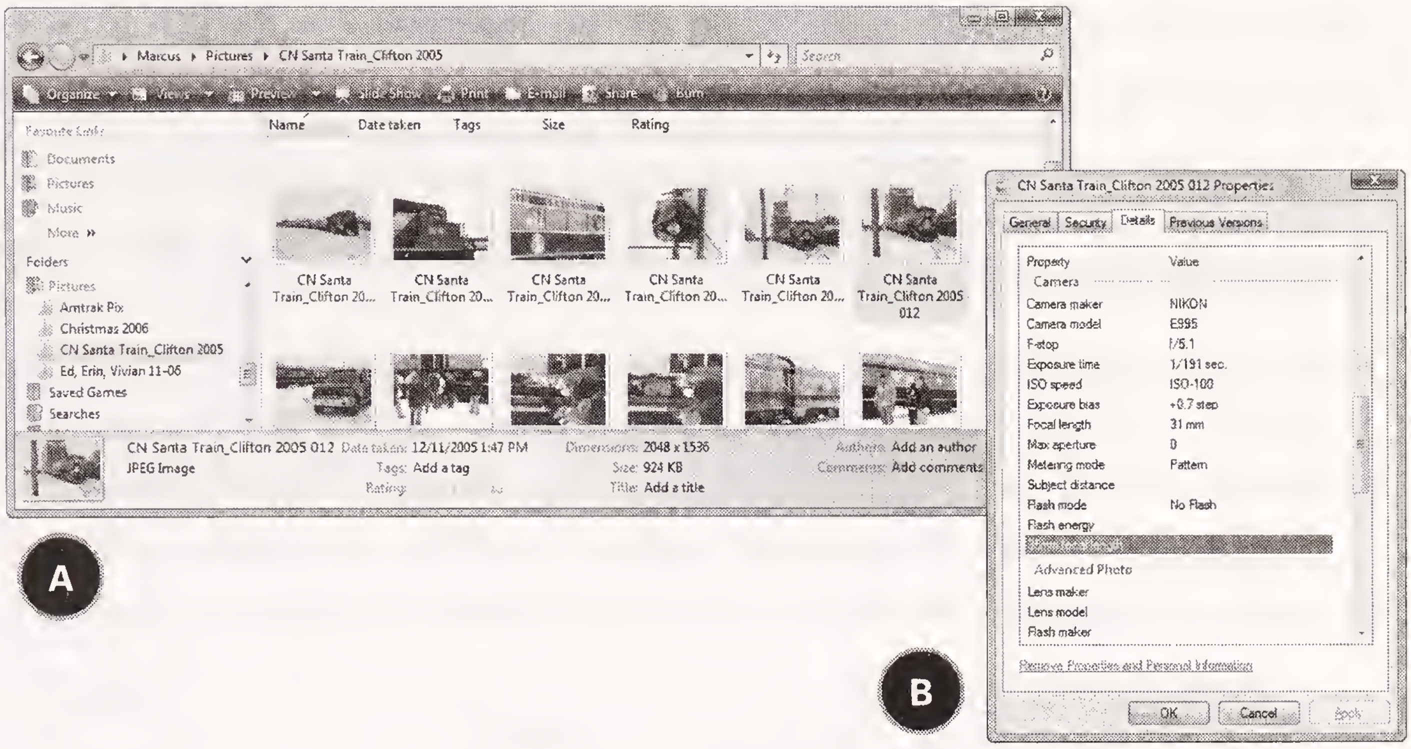
Vista's WordWheel feature may pop up possible matches for tags or authors as you type the first letter of a tag or author. If it displays information you can use, select it from the list and save yourself the time and effort of entering all the information manually.

Viewing and Using Image Metadata

Photographers who are serious about their work live and die by the metadata stored with their digital photos, such as aperture and shutter speed settings, white balance, image size, exposure compensation, zoom lens setting, and more. Virtually all digital cameras store this information, and Windows Vista makes it easy to get to it. To see basic image information such as dimensions, date taken, and size on disk, just click any photo in Pictures Explorer and look at the Details pane at the bottom of the screen (see Figure 5.10 A).

To get a full boatload of image metadata, right-click the picture, select Properties, and click the Details tab (see Figure 5.10 B). Details displays the following types of information about the picture:

- Description—User-provided information such as title, rating, tags, and so on.


Marcus ▸ Pictures ▸ CN Santa Train_Clifton 2005
Search
Organize
Views
Preview
Slide Show
Print
E-mail
Share
Burn
Name
Date taken
Tags
Size
Rating
Favorite Links
Documents
Pictures
Music
More »
Folders
Pictures
Amtrak Pix
Christmas 2006
CN Santa Train_Clifton 2005
Ed, Erin, Vivian 11-06
Saved Games
Searches
CN Santa Train_Clifton 20...
CN Santa Train_Clifton 2005 012
A
General
Security
Details
Previous Versions
Remove Properties and Personal Information
OK
Cancel
Apply
B

CN Santa Train_Clifton 2005 012
JPEG Image
Date taken: 12/11/2005 1:47 PM
Tags: Add a tag
Rating:
Dimensions: 2048 x 1536
Size: 924 KB
Title: Add a title
Authors: Add an author
Comments: Add comments

CN Santa Train_Clifton 2005 012 Properties

Property	Value
Camera	
Camera maker	NIKON
Camera model	E995
F-stop	f/5.1
Exposure time	1/191 sec.
ISO speed	ISO-100
Exposure bias	+0.7 step
Focal length	31 mm
Max aperture	0
Metering mode	Pattern
Subject distance	
Flash mode	No Flash
Flash energy	
Advanced Photo	
Lens maker	
Lens model	
Flash maker	

A Basic metadata is displayed in the Details pane.

B Viewing additional metadata on the Details tab of the picture's properties sheet.

Figure 5.10

Viewing image metadata.

- Origin—When the picture was taken and with what camera/firmware version. Other information, such as copyright, is user-provided.
- Image—Dimensions, resolution, color representation, and other fields. Some information, such as Image ID, is user-provided.
- Camera—Camera brand and model, exposure, white balance, flash, metering, and other information. Some information can be edited by the user.
- Advanced Photo—Various information about the camera and lens, some of which can be user-provided.
- File—Where the image is stored, modified date, image type and name, and other information.

Whether you're a professional photographer or just a casual snapshooter, reviewing metadata can make you a better photographer.

Feature Rating: ***Picture Explorer Metadata***

WARNING

Note to police, attorneys, insurance companies, and others interested in preserving picture evidence: Yes, users can tinker around with a lot of the information displayed in the Details dialog, including some fields you probably shouldn't be able to change.

To make sure somebody's not trying to scam you about the provenance of a digital photo, get your hands on the flash memory card—pronto!

Unleashing Right-Click Power

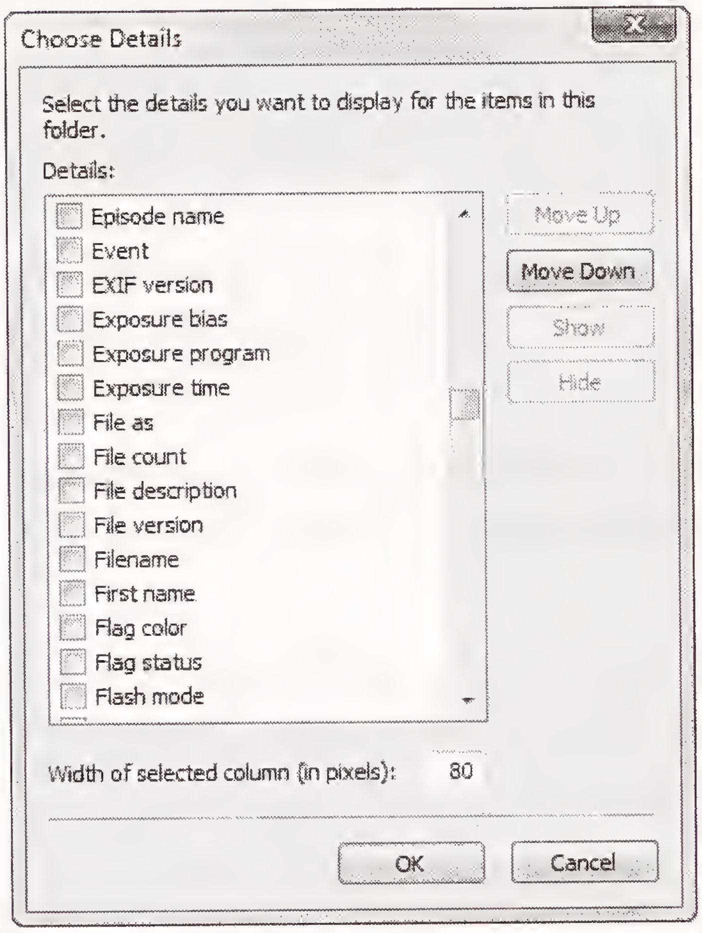
If the standard menu options don't give you enough document-organizing power, right-click any empty space in the explorer display to unleash the power of the context menu. Most of the features are familiar, but some are new:

- The View option adds the capability to enable or disable auto-arrange and align to grid, so if you want to create a customized grouping of files with drag and drop, you can.
- The Sort By, Group By, and Stack By options offer a More button that opens the Choose Details dialog. When you select the Details view (see Figure 5.11), you can display your choice of hundreds of details ranging from A for Account Name to Y for year and tweak the width of the selected column.

WARNING

When you use the Customize This Folder option, there's an option called Also Apply This Template to All Subfolders. Don't do it! Even if you decide to override the default template selection for the current folder, Windows Vista is still free to select the right template for the folder's contents.

However, if you apply the current template to all subfolders and they contain different types of content, you've just created a lot of extra work for yourself. To fix this blunder, you'll need to visit each folder and customize it separately to reflect its contents.


Choose Details

Select the details you want to display for the items in this folder.

Details:

☐ Episode name
☐ Event
☐ EXIF version
☐ Exposure bias
☐ Exposure program
☐ Exposure time
☐ File as
☐ File count
☐ File description
☐ File version
☐ Filename
☐ First name
☐ Flag color
☐ Flag status
☐ Flash mode

Width of selected column (in pixels): 80

Figure 5.11

Working with Choose Details.

Select Customize This Folder to open the Customize tab of the Documents Explorer's properties sheet. Even if a folder containing digital photos is stored beneath a folder containing documents, Windows Vista generally chooses the best folder type for each folder (Documents for the documents folder and Pictures and Videos for the photos folder.) However, you're the boss—choose a different folder template if you want from the following:

- Documents (the default)
- Pictures and Videos
- Music Details

- Music Icons
- All Items

Feature Rating: **Folder Customization**

Using Saved Searches

Windows Vista includes a number of predefined searches you can use to quickly find recent files:

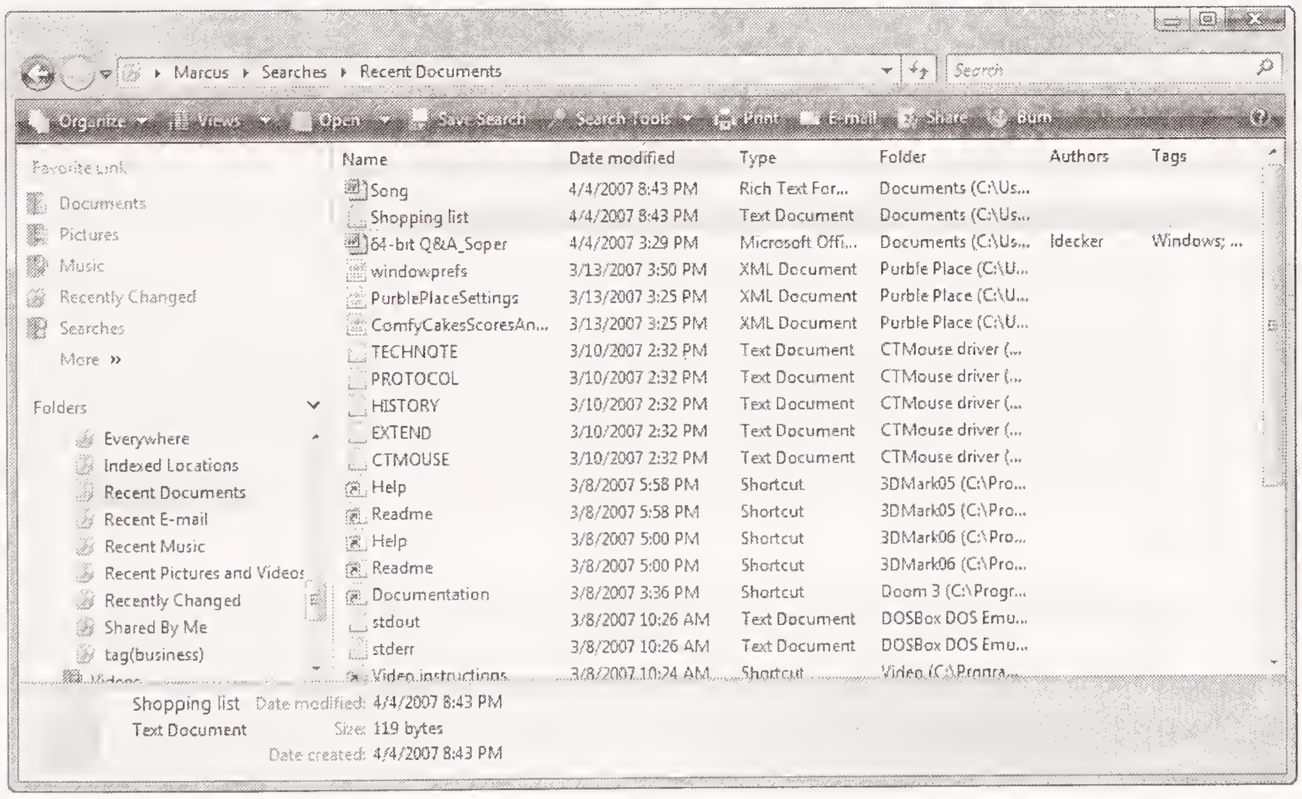
- Recent Documents
- Recent E-mail
- Recent Music
- Shared by Me
- Recent Pictures and Videos
- Recently Changed

Most of these, except for Recently Changed and Shared by Me, show you specific categories of files so you don't need to wade through pictures to find documents, or sort through music tracks to find pictures, and so on.

TIP

If you don't see all of these searches listed, click More in the Favorite Links pane and select Searches from the flyout menu, or drag down the border between the Favorite Links and Navigation panes until Searches is displayed, then select it.

Figure 5.12 shows you a search for Recent Documents. Note that this search uses a special Details view that shows you the location of the document, its author(s), and any tags associated with the document.


Marcus ▸ Searches ▸ Recent Documents
Search
Organize
Views
Open
Save Search
Search Tools
Print
E-mail
Share
Burn
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
More »
Folders
Everywhere
Indexed Locations
Recent Documents
Recent E-mail
Recent Music
Recent Pictures and Videos
Recently Changed
Shared By Me
tag(business)

Name	Date modified	Type	Folder	Authors	Tags
Song	4/4/2007 8:43 PM	Rich Text For...	Documents (C:\Us...		
Shopping list	4/4/2007 8:43 PM	Text Document	Documents (C:\Us...		
64-bit Q&A_Soper	4/4/2007 3:29 PM	Microsoft Offi...	Documents (C:\Us...	ldecker	Windows; ...
windowprefs	3/13/2007 3:50 PM	XML Document	Purble Place (C:\U...		
PurblePlaceSettings	3/13/2007 3:25 PM	XML Document	Purble Place (C:\U...		
ComfyCakesScoresAn...	3/13/2007 3:25 PM	XML Document	Purble Place (C:\U...		
TECHNOTE	3/10/2007 2:32 PM	Text Document	CTMouse driver (...		
PROTOCOL	3/10/2007 2:32 PM	Text Document	CTMouse driver (...		
HISTORY	3/10/2007 2:32 PM	Text Document	CTMouse driver (...		
EXTEND	3/10/2007 2:32 PM	Text Document	CTMouse driver (...		
CTMOUSE	3/10/2007 2:32 PM	Text Document	CTMouse driver (...		
Help	3/8/2007 5:58 PM	Shortcut	3DMark05 (C:\Pro...		
Readme	3/8/2007 5:58 PM	Shortcut	3DMark05 (C:\Pro...		
Help	3/8/2007 5:00 PM	Shortcut	3DMark06 (C:\Pro...		
Readme	3/8/2007 5:00 PM	Shortcut	3DMark06 (C:\Pro...		
Documentation	3/8/2007 3:36 PM	Shortcut	Doom 3 (C:\Progr...		
stdout	3/8/2007 10:26 AM	Text Document	DOSBox DOS Emu...		
stderr	3/8/2007 10:26 AM	Text Document	DOSBox DOS Emu...		
Video instructions	3/8/2007 10:24 AM	Shortcut	Video (C:\Progra...		

Shopping list Date modified: 4/4/2007 8:43 PM
Text Document Size: 119 bytes
Date created: 4/4/2007 8:43 PM

Figure 5.12

Using the Recent Documents search.

Shared by Me provides a similar display but replaces the Type field with a Shared With field. Other searches display the same information and options as the regular explorer for that type of content.

Creating and Saving Customized Searches

To find files by tags or other criteria instead of filename, Advanced Search is your tool of choice. To open Advanced Search from the Start menu, click Search. When the Search window appears, click the down arrow next to Advanced Search.

➪ For more information about the standard Search tool, see "Using Search," Chapter 4, p. 78.

The Advanced Search dialog provides options for searching by date, size, tags, name, and authors. By default, it searches indexed locations, but you can select other drives or particular folders. You can broaden your search in a variety of ways. For example, you can search nonindexed, hidden, and system files by clicking the Include check box—but be prepared to wait for the results. When you run this type of search, note the green background to the address bar; it acts as a progress bar during the search. When you search a nonindexed location (as in Figure 5.13), you are prompted to add it to the index. If you use that location for files, click the prompt to add it to the index to make future searches faster.

To save a search so you can use it again, click Save Search. By default, the search is identified by the criteria you used for the search. For example, the default name for the search shown in Figure 5.13 is tag:(business). You can add tags, add authors, and save the search in a different location. When you save a search, it is added to the Searches menu.

The default Advanced Search checks only indexed locations, but it skips files and folders that have been encrypted using encrypted files system (EFS). To find encrypted files, use the non-indexed search option.

TIP

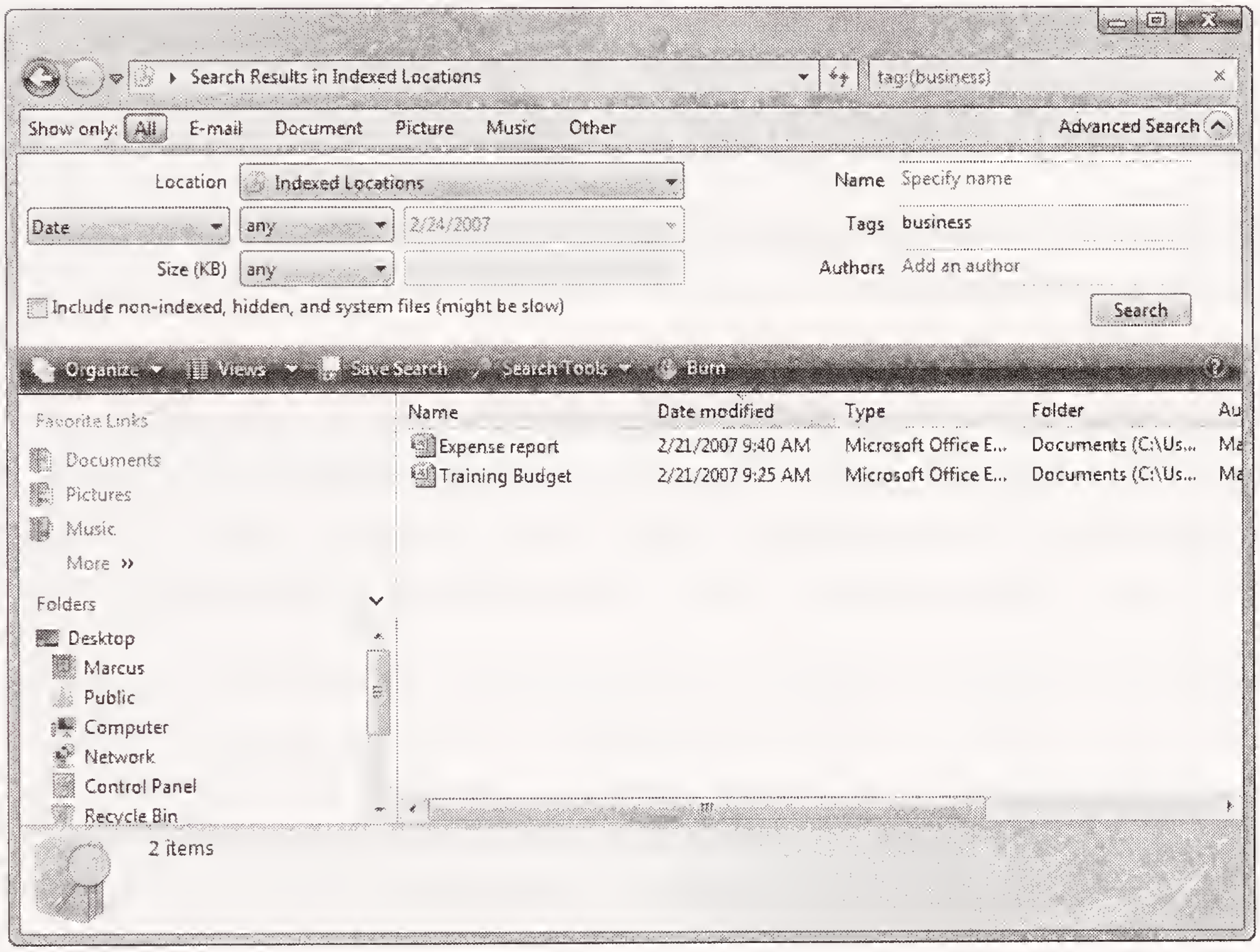
To find files you know are present but seem to be hiding from Search, go back to DOSLand for just a moment and enter a wildcard as the name to search for. For example, to track down OpenOffice Writer (*.odt) files stored in your user folders, enter ***.odt** into the Name field. Before clicking Search, select your username as the location, and make sure the Include box is still checked.

To locate files on any drive, select Computer. To locate files on a particular drive, select it. This method will find files when other methods won't.

If you just deleted files that would have matched your search criteria, they may show up in the search for awhile until Windows Vista reindexes your system. If you're finding phantom files in your search, open Control Panel, click System and Maintenance, Indexing Options, Advanced, and select the folder where the files were located (typically Users). Click Advanced (protected by UAC), then Rebuild to rebuild the index. After the index is rebuilt (which could take awhile), your system should no longer be haunted by the Ghost of Files Past.

TIP

Click the Burn button shown in Figure 5.13 to burn matching files to a CD or DVD. By using the same tags or using the same word as part of the filename for related files of varying types, you can use this feature to round up related files in different locations without folder hopscotching.


Show only: All
E-mail
Document
Picture
Music
Other
Advanced Search
Search
Organize
Views
Save Search
Search Tools
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Desktop
Marcus
Public
Computer
Network
Control Panel
Recycle Bin

Search Results in Indexed Locations

tag:(business)

Location: Indexed Locations

Date: any 2/24/2007

Size (KB): any

☐ Include non-indexed, hidden, and system files (might be slow)

Name: Specify name

Tags: business

Authors: Add an author

Name	Date modified	Type	Folder	Au
Expense report	2/21/2007 9:40 AM	Microsoft Office E...	Documents (C:\Us...	Ma
Training Budget	2/21/2007 9:25 AM	Microsoft Office E...	Documents (C:\Us...	Ma

2 items

Figure 5.13

Using Advanced Search to search indexed and non-indexed locations.

⇨ For more information about rebuilding indexes and fine-tuning indexing operations, see "Indexing Options," Chapter 6, p. 128.

Customizing Favorite Links

The Favorite Links pane of various explorer views lists Documents, Pictures, Music, Recently Changed, Searches, and a link to the shared Public folder. To remove the Documents, Pictures, or Music link, right-click it and select Remove Link. To remove a search from the Searches listing, right-click and select Delete.

Feature Rating: ***Saved and Customized Searches***

TIP

Although you can't add your own links, you can restore deleted links: right-click empty space in the pane and select Restore Default Favorite Links.

File Management Tips and Tricks

Although Windows Vista's file management features put older Windows versions to shame, using the following tips and tricks will help you organize and use your files with less pain and more cowbell!

File Management Best Practices

Use the suggestions in the following sections to manage your files more effectively and to avoid problems.

NOTE

Although files in Public folders are available to any user on the local system, you must configure the folder as Shared to enable network users to access it.

- Use the correct explorer folder for each type of data—The first "best practice" to adopt is to use the folders Windows Vista provides for appropriate content. In other words, store word processing and spreadsheet files in Documents, digital photos in Pictures, downloaded files in Downloads, and so on.
- Make sharing files simple by storing files you want to share in the Public folder—The Public folder can be accessed through the Folders portion of the Navigation pane of any explorer. As with each user's files, Public files should be placed in the appropriate folder (Public Music, and so on).
- Use Windows Media Player and Photo Gallery for tagging—Although you can add and edit tags for digital music and digital photos with the appropriate Explorer, it's much faster to add and edit tags and other information with Windows Media Player (for music) and Windows Photo Gallery (for pictures).
- For more information about tagging music and setting up track and genre information with Windows Media Player, see "Retrieving and Editing CD Information," Chapter 8, p. 196.

⇨ To learn more about tagging pictures with the Windows Photo Gallery, see "Using Windows Photo Gallery," Chapter 9, p. 239.

- If you want to know when a particular file was created or last changed, you can right-click it and select Properties. To get this information for all the files in a folder, choose Details.
- If some files appear to be "missing," make sure you're not using a filter to limit the files you can see in a particular view.

File Management Practices to Avoid

Stay out of trouble by making sure you don't fall into these traps:

- Legacy applications that can't figure out where to store files—Help out an older program by configuring its default folders to use the appropriate folders in Windows Vista. Note that you may need to create folders for backups or other application-specific files or folders.
- Mixing data types in a folder makes choosing a template difficult—By storing different types of data in a particular folder, whether it's in your user folders or on an external driver, you make it more difficult for Windows Vista to choose the best Explorer template to display the folder's contents.

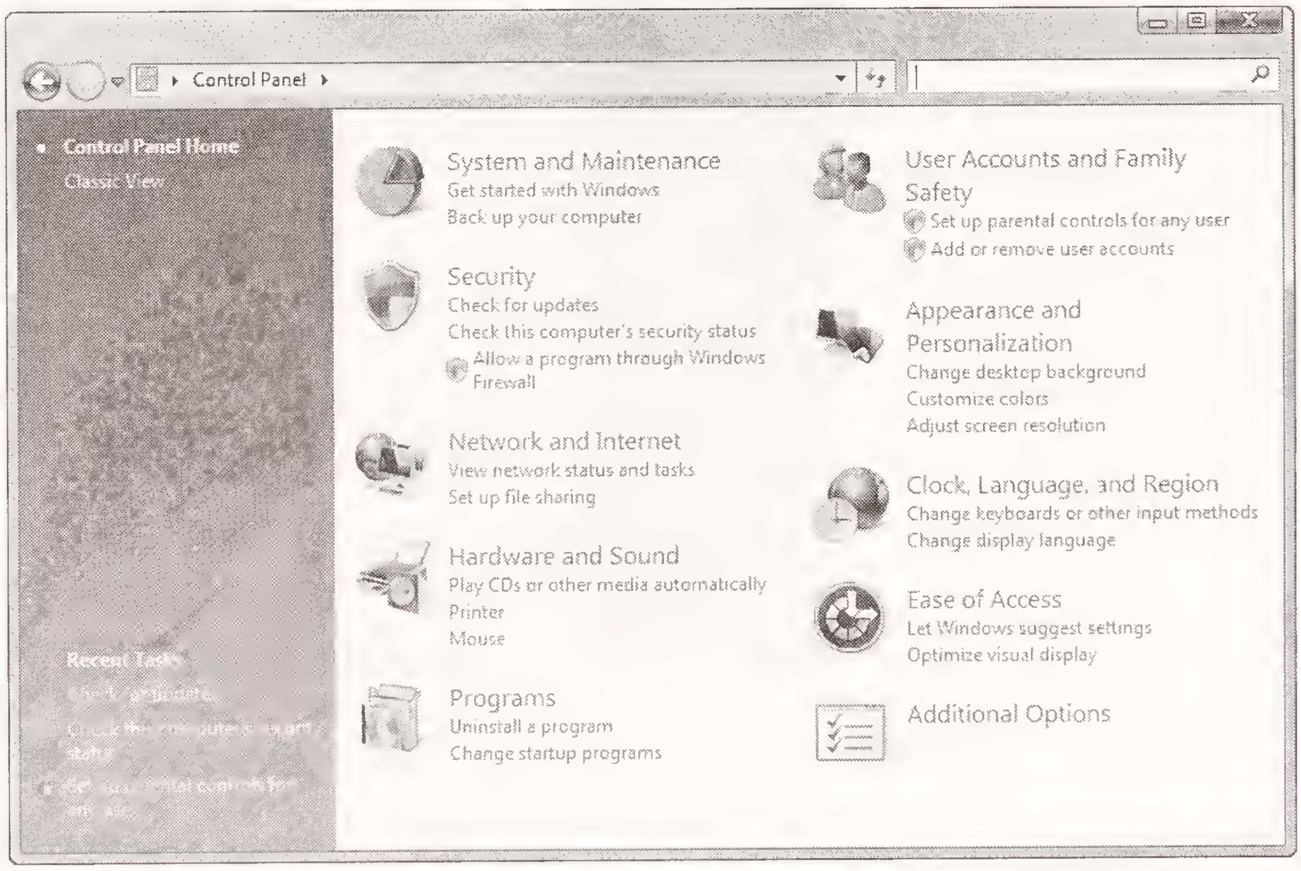
Chapter Six

Mastering Your Hardware and Environment with Vista

Using the Windows Vista Control Panel to Administer and Configure Your PC

IN THIS CHAPTER

- Using the Windows Vista Control Panel to Administer and Configure Your PC
- Control Panel Categories
- System Administration with Control Panel
- Improving Performance with ReadyBoost
- Disk Management


Control Panel
Control Panel Home
Classic View
Recent Tasks
System and Maintenance
Get started with Windows
Back up your computer
Security
Check for updates
Check this computer's security status
Allow a program through Windows Firewall
Network and Internet
View network status and tasks
Set up file sharing
Hardware and Sound
Play CDs or other media automatically
Printer
Mouse
Programs
Uninstall a program
Change startup programs
User Accounts and Family Safety
Set up parental controls for any user
Add or remove user accounts
Appearance and Personalization
Change desktop background
Customize colors
Adjust screen resolution
Clock, Language, and Region
Change keyboards or other input methods
Change display language
Ease of Access
Let Windows suggest settings
Optimize visual display
Additional Options

As in other Windows versions, Windows Vista uses the Control Panel to configure the hardware and operating system. In Windows Vista, the Control Panel features many new options, such as the Welcome Center that is displayed when you start your system for the first time.

NOTE

Control Panel applets and tasks identified with the Windows security shield icon are protected by User Account Control (UAC). You must provide administrator-level credentials to run them, unless you've used MSConfig to put User Account Control to sleep. See "System Configuration (MSConfig)," Chapter 15, p. 367, for details.

To open Control Panel's home page from Welcome Center, click Control Panel in the address bar of the Welcome Center dialog, or click Show All Items and select Control Panel. You can also click the Start button and select Control Panel from the right-hand menu.

Windows Vista's Control Panel operates in two modes, just as in Windows XP. The default view shown at the start of this chapter, although not referred to as Category View as it was in Windows XP, provides categories for common management tasks. You can click the category, or go directly to one of the featured tasks. One new feature in Windows Vista's category view is the Recent Tasks history, which tracks the most-recently performed Control Panel tasks. You'll find it in the bottom of the left-hand pane of Control Panel.

If you prefer the traditional Control Panel view of separate icons (see Figure 6.1), click Classic View from the left-hand menu. Classic View in Windows Vista is similar to Windows XP's Classic View.

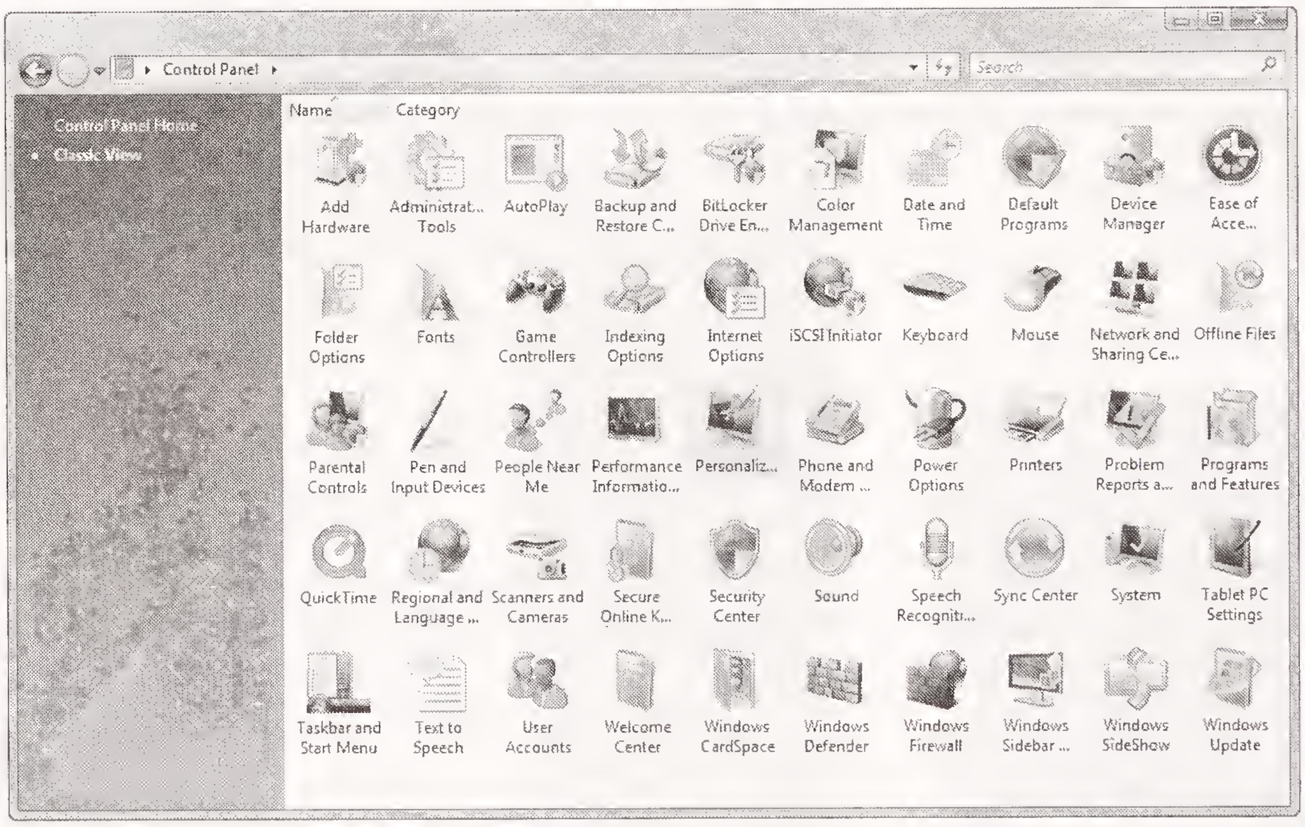

Control Panel
Search
Control Panel Home
Classic View
Name
Category
Add Hardware
Administrat... Tools
AutoPlay
Backup and Restore C...
BitLocker Drive En...
Color Management
Date and Time
Default Programs
Device Manager
Ease of Acce...
Folder Options
Fonts
Game Controllers
Indexing Options
Internet Options
iSCSI Initiator
Keyboard
Mouse
Network and Sharing Ce...
Offline Files
Parental Controls
Pen and Input Devices
People Near Me
Performance Informatio...
Personaliz...
Phone and Modem ...
Power Options
Printers
Problem Reports a...
Programs and Features
QuickTime
Regional and Language ...
Scanners and Cameras
Secure Online K...
Security Center
Sound
Speech Recogniti...
Sync Center
System
Tablet PC Settings
Taskbar and Start Menu
Text to Speech
User Accounts
Welcome Center
Windows CardSpace
Windows Defender
Windows Firewall
Windows Sidebar ...
Windows SideShow
Windows Update

Figure 6.1

Control Panel's Classic View.

If you're accustomed to switching to Classic View (as many experienced Windows users did when they first started XP), take a few minutes to try the default Windows Vista Control Panel view first. It's organized a lot better than its Windows XP forerunner, and you might decide it's worth keeping as your default. The following sections provide a guided tour of the new categories, and how to use new and enhanced applets.

Control Panel Categories

Control Panel's default category view contains ten categories on desktop computers: Nine are used for standard Windows Vista features, whereas the tenth category, Additional Options, is used for third-party Control Panel icons, such as the control center for the video drivers used by your video card. Laptop and Tablet PC systems include an additional category called Mobile PC.

Standard categories include

- System and Maintenance
- Security
- Network and Internet
- Hardware and Sound
- Programs
- Mobile PC
- User Accounts and Family Safety
- Appearance and Personalization
- Clock, Language, and Region
- Ease of Access

Virtually every item listed in a category is also available from Control Panel's Classic View. Classic View also provides access to the rarely-used Add Hardware applet, which is used primarily for installing non-PnP hardware.

System Administration with Control Panel

The following sections discuss the most significant new and improved Control Panel applets used for system administration. To find discussions of Control Panel applets and tasks discussed elsewhere in this book, use Table 6.1.

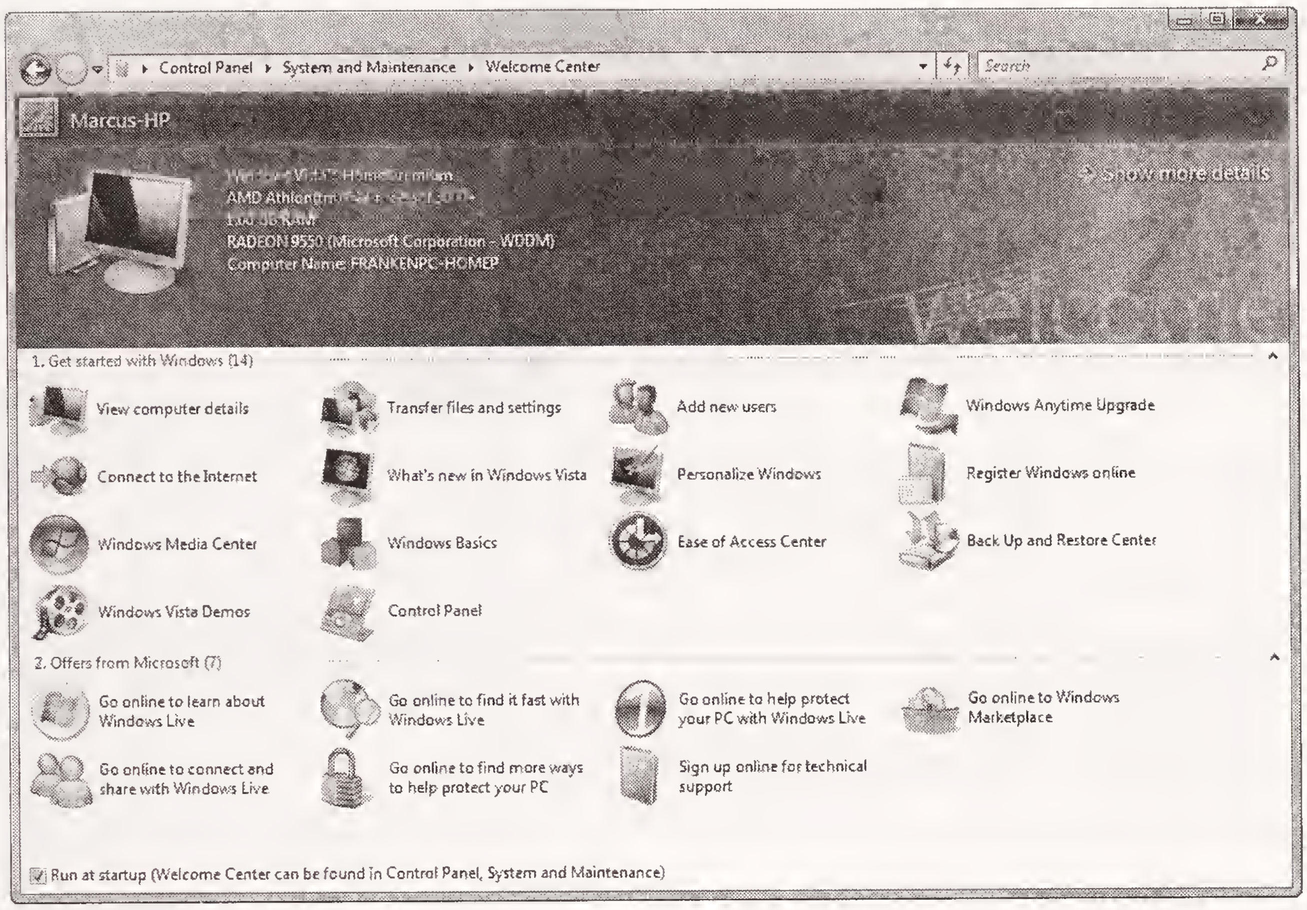
Table 6.1 Control Panel Coverage in Other Chapters

Feature	Refer to	Feature	Refer to
Ease of Access Center	Configuring Ease of Access Options, page 91	Windows CardSpace	Using Windows CardSpace, page 336
Personalization	Configuring Ease of Access Options, page 91	Security Center	Using Windows Security Center, page 338
Taskbar and Start Menu	Customizing the Taskbar, Notification Area, and Toolbars; Customizing the Start Menu, pages 81 and 83	Windows Defender	Using Windows Defender, page 340
		Windows Firewall	Using Windows Firewall, page 342
		Device Manager	Using Device Manager, page 370
Windows Sidebar	Using Gadgets and the Windows Sidebar, page 74	Memory Diagnostics	Using Memory Diagnostics, page 364
People Near Me	Using Windows Meeting Space, page 159	Problem Reports and Solutions	Using Problem Reports and Solutions, page 366
Network and Sharing Center	Using the Network and Sharing Center, page 294	Reliability and Performance Monitor	Using Reliability and Performance Monitor, page 375
Backup and Restore Center	Windows Backup and Restore Center, page 319		
BitLocker	Using BitLocker, page 349	System Configuration (MSConfig)	System Configuration (MSConfig), page 367
Parental Controls	Using Parental Controls, page 333	Windows Update	Using Windows Update and Microsoft Update, page 354
User Accounts	Managing User Accounts and Family Safety, page 329		

Welcome Center

The Windows Vista Welcome Center, shown in Figure 6.2, appears automatically when you start Windows Vista for the first time, throwing out the welcome mat to new Windows Vista users and also providing links to many useful (and a few not-so-useful) features ranging from Windows Easy Transfer to Windows Marketplace.

⇨ For more information about transferring files and settings with Windows Easy Transfer, see "Transferring Settings with Windows Easy Transfer," Chapter 3, p. 61.


Control Panel ▸ System and Maintenance ▸ Welcome Center
Search
Marcus-HP
AMD Athlon
RADEON 9550 (Microsoft Corporation - WDDM)
Computer Name: FRANKENPC-HOMEP
Show more details
1. Get started with Windows (14)
View computer details
Transfer files and settings
Add new users
Windows Anytime Upgrade
Connect to the Internet
What's new in Windows Vista
Personalize Windows
Register Windows online
Windows Media Center
Windows Basics
Ease of Access Center
Back Up and Restore Center
Windows Vista Demos
Control Panel
2. Offers from Microsoft (7)
Go online to learn about Windows Live
Go online to find it fast with Windows Live
Go online to help protect your PC with Windows Live
Go online to Windows Marketplace
Go online to connect and share with Windows Live
Go online to find more ways to help protect your PC
Sign up online for technical support

☑ Run at startup (Welcome Center can be found in Control Panel, System and Maintenance)

Figure 6.2

Use the Windows Vista Welcome Center to start Windows Easy Transfer, set up users, and perform initial setup tasks.

TIP

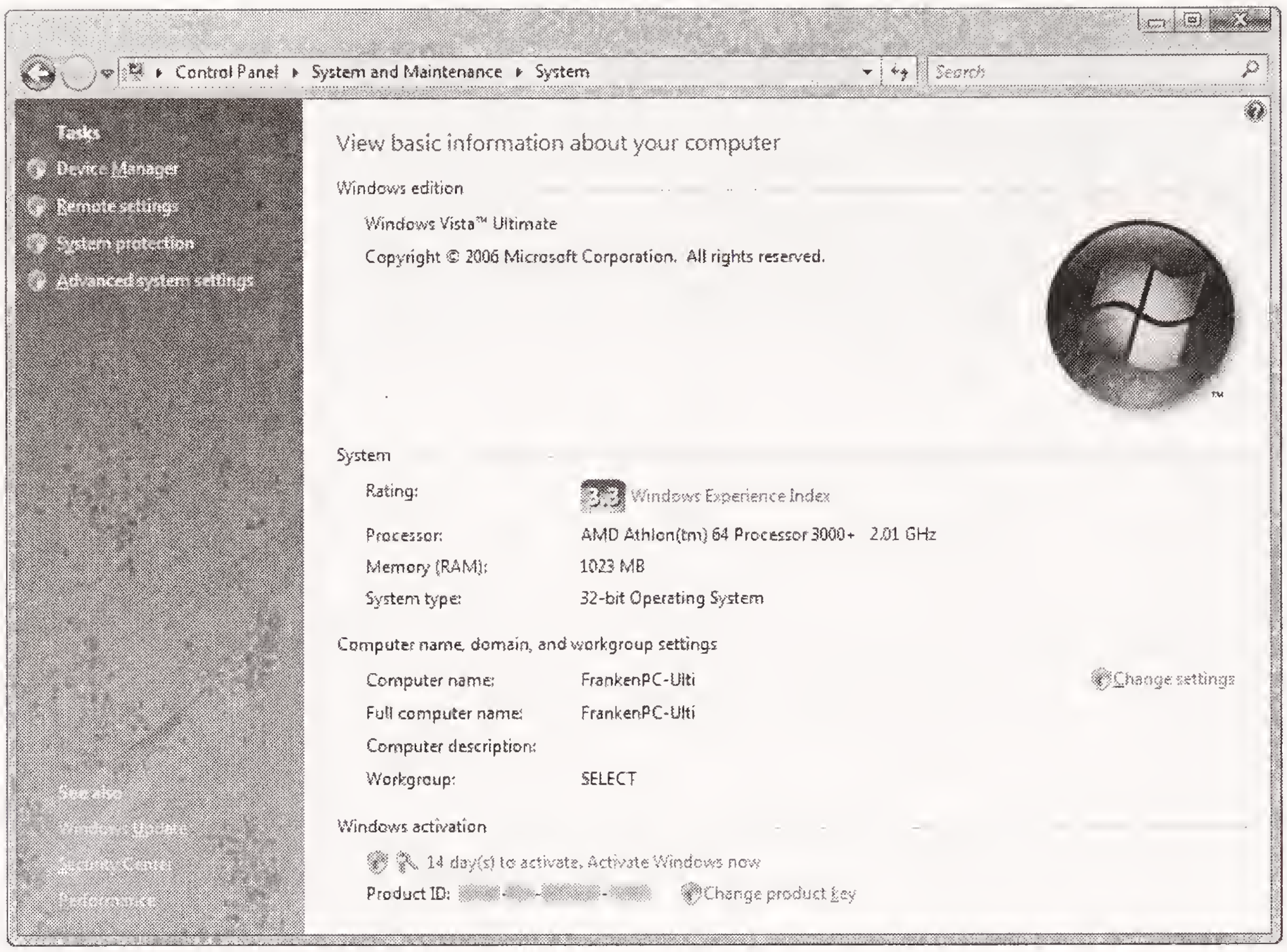
To display all the Welcome Center features as shown in Figure 6.2, click the 'Show All Items' link displayed when you open Welcome Center. To prevent Welcome Center from being displayed when you start Windows, clear the Run at Startup check box.

System

The System properties sheet has always been one of the most important tools for getting "under the hood" of a Windows system, and in Windows Vista, it's gone through one of the most extreme makeovers of any feature carried over from previous versions (see Figure 6.3).

Right up front, you see all the most important facts about your system:

- Vista edition
- WEI rating
- Processor type and clock speed
- Available memory
- 32-bit or 64-bit operating system version
- Computer name and description
- Workgroup
- Windows activation status
- Product key


Control Panel ▸ System and Maintenance ▸ System
Search
Tasks
Device Manager
Remote settings
System protection
Advanced system settings
See also
Windows Update
Security Center
Performance
Change settings
Change product key

View basic information about your computer

Windows edition

Windows Vista™ Ultimate

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System

Rating: 3.3 Windows Experience Index

Processor: AMD Athlon(tm) 64 Processor 3000+ 2.01 GHz

Memory (RAM): 1023 MB

System type: 32-bit Operating System

Computer name, domain, and workgroup settings

Computer name: FrankenPC-Ulti

Full computer name: FrankenPC-Ulti

Computer description:

Workgroup: SELECT

Windows activation

14 day(s) to activate. Activate Windows now

Product ID: [redacted]

Figure 6.3

The System properties sheet for a typical system (the product key has been altered).

There's no more need to dig through tab after tab to see a quick snapshot of your system.

Click Advanced System Settings to open System properties' Advanced tab, from which you can tweak performance settings, user profiles, startup and recovery options, and environmental variables (see the following section for details). Click System Protection to open the System Protection tab, which configures System Restore. Click Remote Settings to open the Remote tab, which configures Remote Assistance and Remote Desktop. Figure 6.4 shows these tabs.

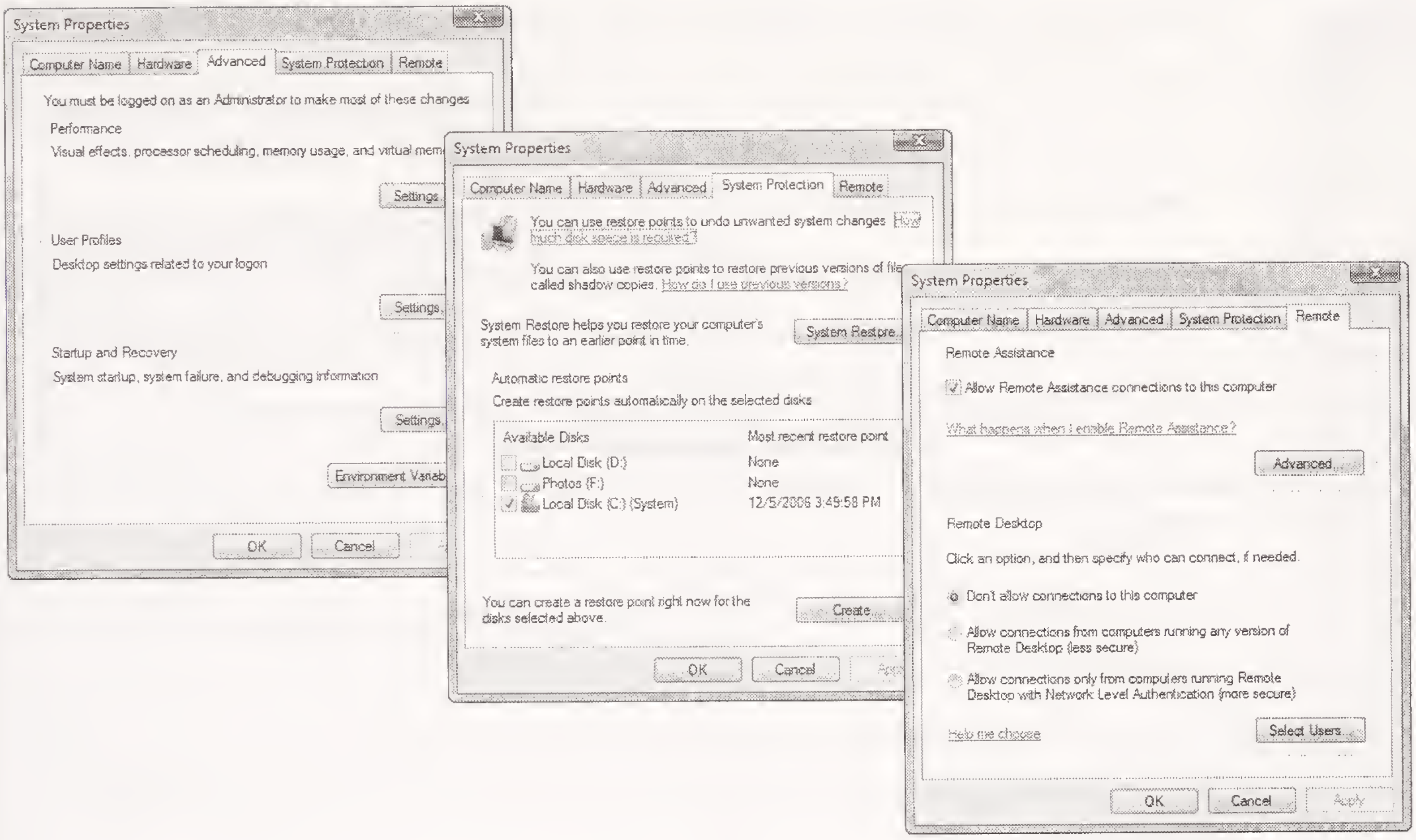
Windows Home Premium and Home Basic editions do not support Remote Desktop.

System provides the easiest-to-understand display of important system and networking information ever provided in Windows, along with faster access to the most common tasks.

👍 *Feature Rating:* ***System***

TIP

The default workgroup name in Windows Vista is (get ready...) WORKGROUP. How original is that? (And, of course, it's different from the Windows XP Network Setup wizard's default of MSHOME.) If you can't connect to other PCs on a network, but you can connect to the Internet, make sure all the PCs on the network are using the same workgroup name. See Chapter 12 for more about networking.


System Properties
Computer Name
Hardware
Advanced
System Protection
Remote
Settings...
Settings...
Settings...
Environment Variab
OK
Cancel
System Restore...
Create...
Apply
Advanced...
Select Users...
How much disk space is required?
How do I use previous versions?
What happens when I enable Remote Assistance?
Help me choose

You must be logged on as an Administrator to make most of these changes

Performance

Visual effects, processor scheduling, memory usage, and virtual mem

User Profiles

Desktop settings related to your logon

Startup and Recovery

System startup, system failure, and debugging information

You can use restore points to undo unwanted system changes

You can also use restore points to restore previous versions of file called shadow copies.

System Restore helps you restore your computer's system files to an earlier point in time.

Automatic restore points

Create restore points automatically on the selected disks

Available Disks	Most recent restore point
☐ Local Disk (D:)	None
☐ Photos (F:)	None
☑ Local Disk (C:) (System)	12/5/2006 3:49:58 PM

You can create a restore point right now for the disks selected above.

Remote Assistance

☑ Allow Remote Assistance connections to this computer

Remote Desktop

Click an option, and then specify who can connect, if needed.

● Don't allow connections to this computer

○ Allow connections from computers running any version of Remote Desktop (less secure)

○ Allow connections only from computers running Remote Desktop with Network Level Authentication (more secure)

Figure 6.4

System properties sheet tabs for configuring Advanced performance, System Protection, and Remote settings.

Power Options

Although previous versions of Windows have featured power management, Windows Vista's Power Options dialog provides an unusual mix of more capabilities and an easier user interface than its predecessors.

The main dialog shows three standard power plans:

- Balanced (the default)—Equalizes energy savings and performance
- Power Saver—Reduces system performance to save energy and (on portables) to improve battery life
- High Performance—Maximum performance = minimum battery life (on portables) or maximum AC energy use (on desktops)

If you're a power-management fanatic, click Change Plan Settings under your preferred power plan, click Change Advanced Power Settings on the Edit Plan Settings dialog, and you can view (or tweak) power settings for everything from PCI Express and USB to wireless adapter and hard disk drives.

TIP

The default Balanced power setting may slow down your desktop, especially if it supports thermal throttling or other processor-based power-saving features. To get full performance for a desktop or a laptop on AC power, select High Performance.

However, if you select High Performance on a laptop, don't forget to change the power setting when you use it on batteries, or your system will run itself down in a hurry! Move your mouse over the battery meter in the system tray to display your battery's charge state and the current power plan.

WARNING

If you don't know what you're doing, you can make a hash of your system by fiddling with advanced power settings. Click the question mark at the top of the Advanced Settings dialog to get help, and remember that you can always click the Restore Plan Defaults button to restore settings to their defaults.

If you want to experiment with customizing advanced settings, create your own power plan and make changes to it, rather than tinkering with the standard plans.

Use the Tasks pane to make other tweaks to your power settings:

- Keep snoopers off your system when you're away from your computer by enabling the option to require a password to wake up your system.
- Prefer to have the power button put the system into hibernate or standby mode? You have the power (pardon the pun)!
- Don't like the default power plans? Create your own!
- Change when to turn off the display and when the computer sleeps.
- On a laptop, change what happens when you close the display.

Windows Vista's power management provides outstanding flexibility in both its standard power plans and a wide range of customization.

Feature Rating: ***Power Options***

Indexing Options

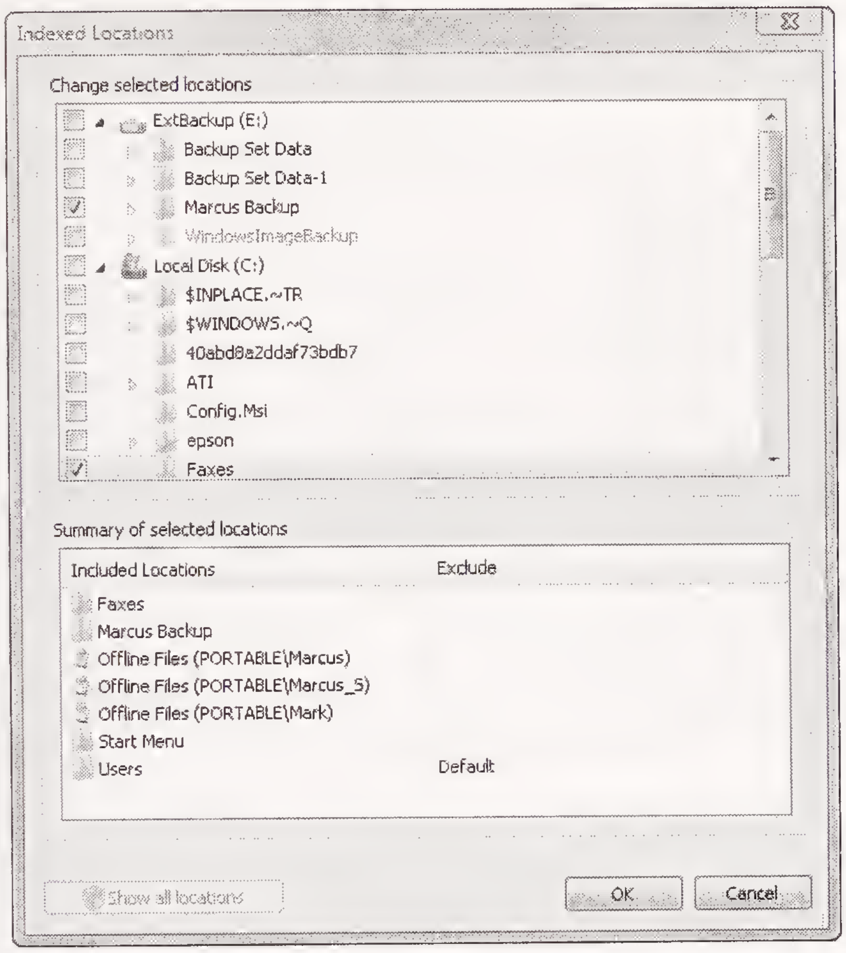
One of Windows Vista's best new features is its integrated real-time filename and contents index. It's the magic behind Instant Desktop Search's capability to find a file or a file's contents in a few seconds, Windows Media Player's performer/composer/genre/title search, and much more. The Indexing Options dialog provides information on what is indexed and provides several ways to tweak indexing for even better results.

The main dialog indicates the number of items (files) indexed. Don't be surprised to see tens of thousands of items indexed on a typical system. By default, Windows Vista's index includes offline files, the Start menu, and the folders belonging to each user. To adjust what is indexed, click Modify. Check boxes indicate indexed locations. Clear check boxes to prevent a location from being indexed. To index additional locations on the system drive or other hard disks, click Show All Locations and provide administrator credentials if prompted by User Account Control. From the Change selected locations portion of the Indexed Locations dialog, click the check box next to a drive letter to index the entire drive (except for the Program Files, Program Data, Default, and Windows folders on the system drive).

To index only selected folders, expand the drive's display and click the folders desired. Figure 6.5 demonstrates the selection of folders on C: and E: drives.

TIP

If you use external hard disks to store data you use frequently, select the drive or the appropriate folders on the drive for indexing.



Change selected locations

- ☐ ExtBackup (E:)
  - ☐ Backup Set Data
  - ☐ Backup Set Data-1
  - ☑ Marcus Backup
  - ☐ WindowsImageBackup
- ☐ Local Disk (C:)
  - ☐ $INPLACE.~TR
  - ☐ $WINDOWS.~Q
  - ☐ 40abd8a2ddaf73bdb7
  - ☐ ATI
  - ☐ Config.Msi
  - ☐ epson
  - ☑ Faxes

Summary of selected locations

Included Locations	Exclude
Faxes	
Marcus Backup	
Offline Files (PORTABLE\Marcus)	
Offline Files (PORTABLE\Marcus_S)	
Offline Files (PORTABLE\Mark)	
Start Menu	
Users	Default

Figure 6.5

Selecting additional folders on C: and E: drives for indexing.

To troubleshoot indexing problems or to enable the indexing of encrypted files, click Advanced from the main Indexing Options dialog to bring up the Index Settings tab of the Advanced Options dialog. Click the File Types tab to specify what file extensions to index, and whether to index by filename only or by name and contents.

Even without fine-tuning, the indexing features in Windows Vista make its searches faster, easier, and more powerful than with any previous Windows version. The ability to tweak where and how indexing works is icing on an already-delicious cake.

Feature Rating: ***Indexing Options***

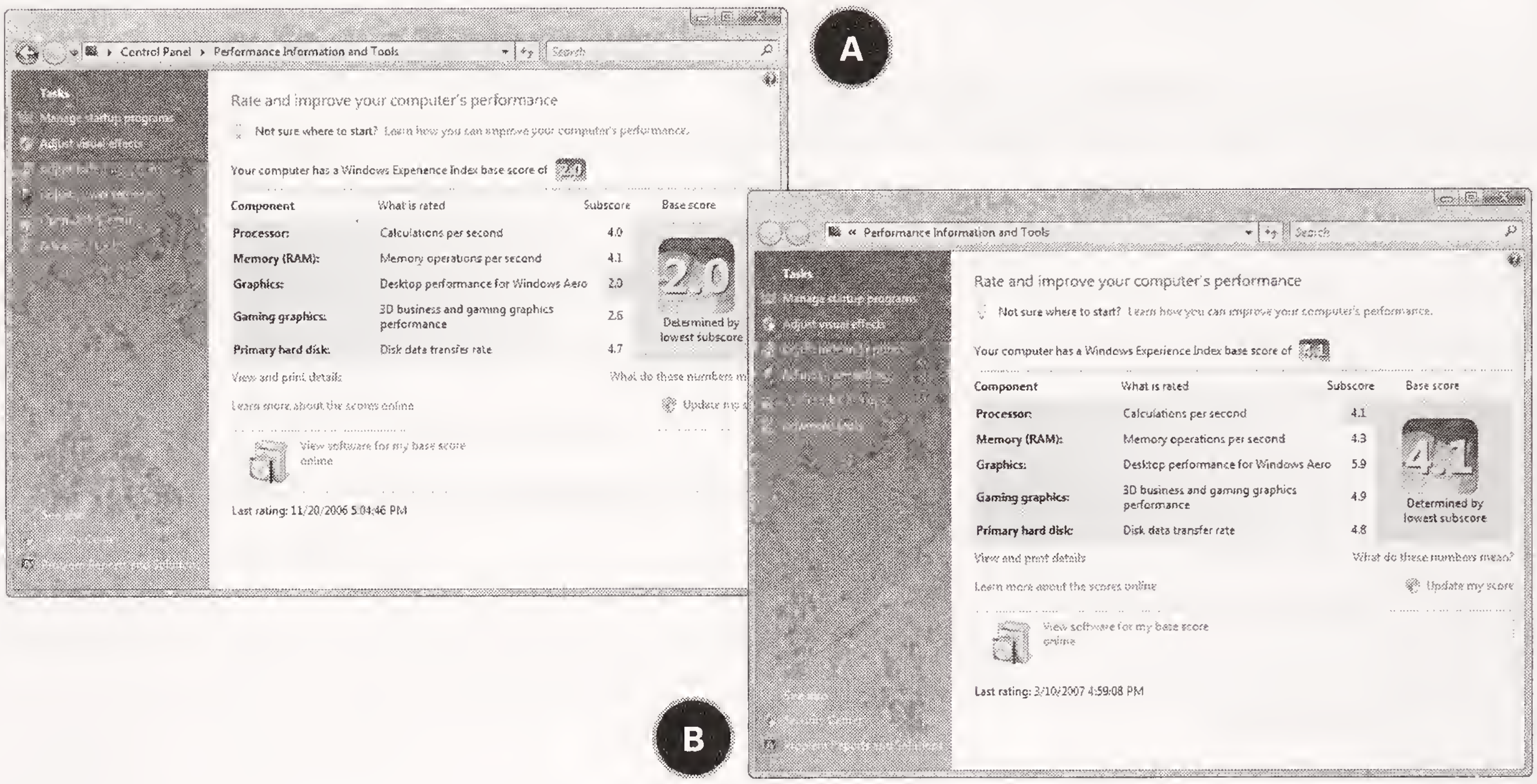
TIP

If you cannot search the contents of some file types (extensions), use the File Types tab to verify that the file extension is selected for indexing by properties and file contents. Click the Index Properties and File Defaults radio button and click OK to solve the problem. You can also add new file extensions for indexing.

Performance Information and Tools

The new Performance Information and Tools dialog helps you discover the performance bottlenecks in your system and provide tweaks to your Windows Vista configuration that may help improve system performance.

The main Performance Information and Tools display (see Figure 6.6) shows the details of the Windows Experience Index.


A
B
Control Panel › Performance Information and Tools
« Performance Information and Tools
Search
Tasks
Manage startup programs
Adjust visual effects

Rate and improve your computer's performance

Not sure where to start? Learn how you can improve your computer's performance.

Your computer has a Windows Experience Index base score of 2.0

Component	What is rated	Subscore	Base score
Processor:	Calculations per second	4.0	2.0 Determined by lowest subscore
Memory (RAM):	Memory operations per second	4.1	
Graphics:	Desktop performance for Windows Aero	2.0	
Gaming graphics:	3D business and gaming graphics performance	2.6	
Primary hard disk:	Disk data transfer rate	4.7	

View and print details

Learn more about the scores online

View software for my base score online

Last rating: 11/20/2006 5:04:46 PM

Rate and improve your computer's performance

Not sure where to start? Learn how you can improve your computer's performance.

Your computer has a Windows Experience Index base score of 4.1

Component	What is rated	Subscore	Base score
Processor:	Calculations per second	4.1	4.1 Determined by lowest subscore
Memory (RAM):	Memory operations per second	4.3	
Graphics:	Desktop performance for Windows Aero	5.9	
Gaming graphics:	3D business and gaming graphics performance	4.9	
Primary hard disk:	Disk data transfer rate	4.8	

View and print details

What do these numbers mean?

Learn more about the scores online

Update my score

View software for my base score online

Last rating: 3/10/2007 4:59:08 PM

Figure 6.6

The Windows Experience Index for the author's experimental PC before (A) and after (B) a graphics card upgrade.

The Windows Experience Index (WEI) rates your system in five different areas:

- Processor calculations per second (CPU)
- Memory operations per second (RAM)
- Windows Aero desktop performance (AERO)
- 3D graphics performance (3D)
- System hard disk's data transfer rate (HD)

The lowest subsystem score is used to determine the WEI base score. Although the WEI is calculated during the final stages of installation, if your hardware changes, you can rerun the performance calculation as I explain later in this chapter.

The WEI for the computer shown in Figure 6.6 A is only 2.0, although three subsystems list a score of 4.0 or higher. What gives? The Windows Experience Index is designed to show you the weak points, as well as the strengths, of your computer's subsystems. In the case of FrankenPC, its weak point in Figure 6.6 A is the graphics card. It's barely capable of running Windows Aero (its Aero score is a mere 2.0), and its 3D graphics performance is not likely to help me survive the first mission in Call of Duty 3. After upgrading the graphics card (Figure 6.6 B), the WEI base score is 4.1, based on the processor, which is now the lowest-scoring device.

How big a deal is a low Windows Experience Index? It depends on what you use your PC for. Table 6.3 lists desirable subsystem scores for various work and play tasks.

Table 6.3 Recommended WEI Base and Subsystem Scores for Typical Tasks

Task	Base Score	CPU	RAM	Aero	3D	HD
Using Microsoft Office or other office suites	2.0 or higher	4.0 or higher	4.0 or higher	2.0 or higher	2.0 or higher	2.0 or higher
3D gaming, video, or photo content creation	3.0 or higher	4.0 or higher	4.0 or higher	3.0 or higher	4.0 or higher	4.0 or higher
Using Media Center	3.0 or higher	4.0 or higher	3.0 or higher	4.0 or higher	3.0 or higher	4.0 or higher
Web surfing, email	2.0 or higher	2.0 or higher	2.0 or higher	2.0 or higher	2.0 or higher	2.0 or higher

When you use Windows Vista's new Games Explorer, it displays the required and recommended WEI base score for games that support Microsoft's new game performance rating system.

⇨ To learn more about Games Explorer and how to use WEI scores to help you upgrade for better gaming, see Chapter 10, "Gaming with Windows Vista."

Although not much software currently provides WEI base score recommendations, over time, expect to see Microsoft and third-party vendors start providing WEI recommendations for more and more programs.

Finding Your WEI to a Higher Score

Because the WEI is based on the lowest score of the subsystems it evaluates, upgrading even a single subsystem can get you a better score—and make Windows Vista more fun!

- If your computer has less than 1GB of RAM, bump it up to at least 1GB. When I tested the system shown in Figures 6.6 A and B with only 512MB of RAM, the memory subsystem scored only 2.9. The 4.1 memory score shown in Figures 6.6 A and B was achieved by upgrading the RAM to 1GB.

- If your system supports dual-channel memory configurations, but you're limping along with a mishmash of different memory sizes (or speeds), replace your system's mix-and-match modules with a matched set—and be sure to insert them in the correct slots for dual-channel operation!
- If your Aero or 3D scores are low, replace your graphics card with a midrange to high-end graphics card based on one of the GPUs on the Windows Vista approved list.
- Upgrading to a faster processor (especially if you upgrade from an economy processor such as an Intel Celeron or AMD Sempron) will improve your processor score.

Processor Upgrades Are Not for Everyone

Before you decide to jump on the processor-upgrade bandwagon, make sure you have a place to jump to. It's not nearly enough to know what processor brand you have—face it, recent Celerons are available in both the musty old Socket 478 and the newer Socket 775 form factors supported by faster Intel processors (including Core 2 Duo), and AMD has used the Sempron brand for processors using creaky Socket A, the long-in-the-tooth Socket 754, as well as the brand-new Socket AM2 also used by Athlon 64 FX and X2 processors. Meanwhile, both companies have cranked out numerous variations in processor core design, voltage requirements, and so on for a given socket. You really need to know what motherboard you have (its chipset is the real determining factor of what processors will work) to determine what processors you can use. Go to the mobo vendor's website for the latest info—and BIOS upgrades—to see what will work.

Before you lay out some old Benjamins (or some shiny new plastic) for a new proc, be sure to check out reviews in *Maximum PC* magazine, its website (www.maximumpc.com), as well as websites such as Tom's Hardware (www.tomshardware.com) and AnandTech (www.anandtech.com) to see how much real-world performance boost a faster processor can give you.

Don't upgrade your processor, though, if the rest of your system isn't up to par either. Instead, spring for a new system based on a fast dual-core or quad-core processor, PCI Express graphics (preferably with SLI or CrossFire support) and other high-performance onboard goodies (gigabit Ethernet, SATA RAID, and HD audio). Windows Vista puts the hurt on old hardware, and replacing only the CPU if the rest of your system can't cut the mustard is a waste of money.

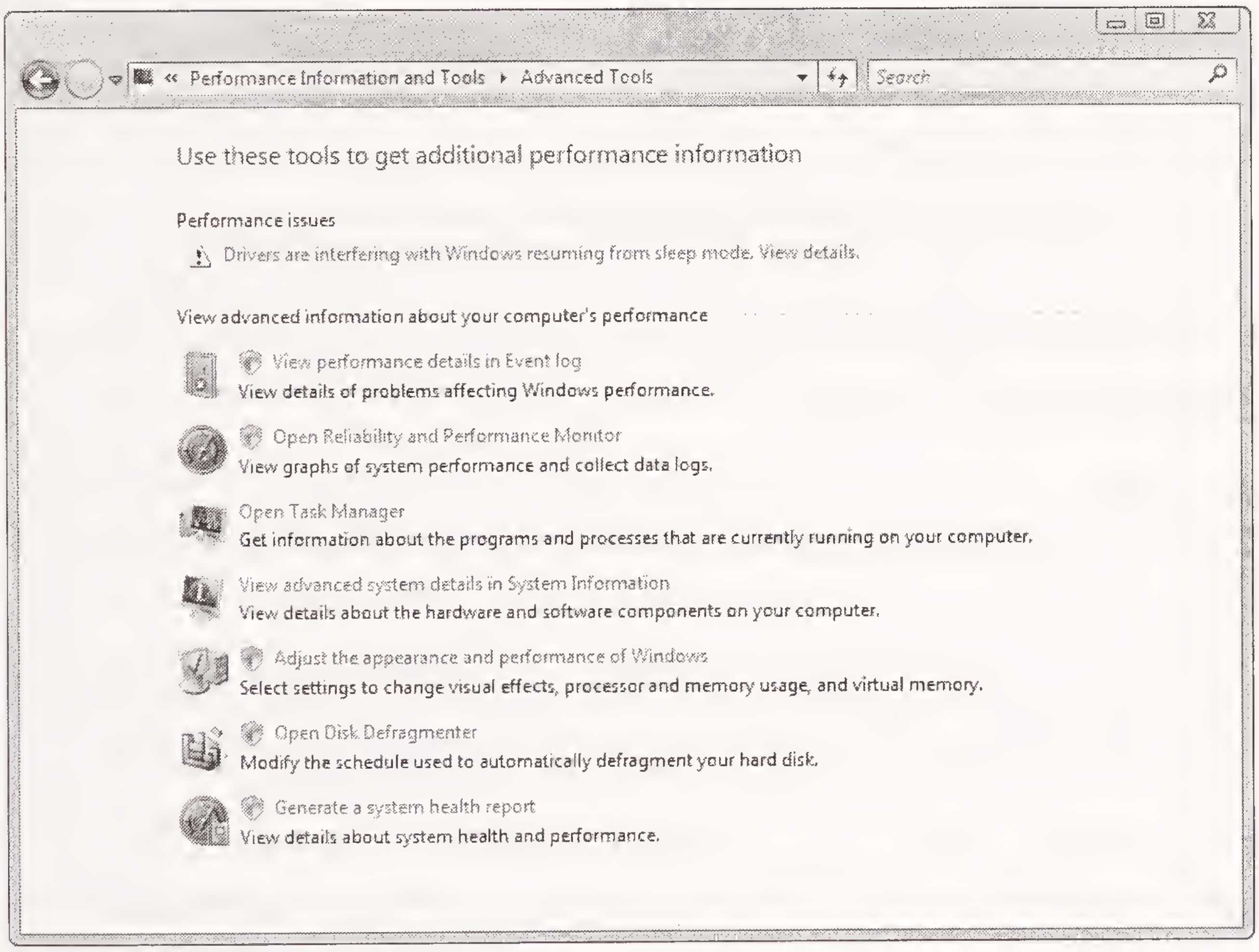
Click the Refresh Now button to retest your system after an upgrade. Close System, reopen it after retesting your system and it will display the new WEI base score.

Although the Windows Experience Index isn't perfect, it's a great first step in providing all Windows users a consistent way to evaluate their hardware's performance.

Feature Rating: ***Performance Information and Tools***

Diagnosing Performance Issues with Advanced Tools

If you're serious about Windows performance (and if you're not, why are you reading this book?), click the Advanced Tools link in the Tasks pane shown in Figure 6.6 to display the dialog shown in Figure 6.7.



Use these tools to get additional performance information

Performance issues

Drivers are interfering with Windows resuming from sleep mode. View details.

View advanced information about your computer's performance

View performance details in Event log
View details of problems affecting Windows performance.

Open Reliability and Performance Monitor
View graphs of system performance and collect data logs.

Open Task Manager
Get information about the programs and processes that are currently running on your computer.

View advanced system details in System Information
View details about the hardware and software components on your computer.

Adjust the appearance and performance of Windows
Select settings to change visual effects, processor and memory usage, and virtual memory.

Open Disk Defragmenter
Modify the schedule used to automatically defragment your hard disk.

Generate a system health report
View details about system health and performance.

Figure 6.7

Advanced performance tools.

The Advanced Tools dialog helps you wrestle with configuration, hard disk, and driver issues that might be putting the brakes on your system.

The Performance Issues section of Advanced Tools lists any system problems that are interfering with performance. To learn more about an item, click it to bring up a dialog listing the item, driver version, and behavior. Click OK if you want to keep using the item and to be reminded the next time it malfunctions, click Remove from List to remove the item from the list of performance problems, or click Help to bring up a list of driver links.

➪ See "Using Device Manager," Chapter 15, p. 370, for more information on working with drivers and devices.

➪ For information about other advanced performance tools, see Chapter 15, "Troubleshooting and Maintaining Windows Vista."

NOTE

To update or uninstall a driver, click Help and then click Repair or Update a Driver. To roll back a driver to the previous version, click Help and then click Restore a Driver to Its Previous Version. You will be prompted to open Device Manager during the process.

System Information

The System Information utility you can launch from Advanced Tools (which can also be started from Run with the command `MSInfo32`) is the fastest and most thorough way to learn about your system short of taking a screwdriver to your PC and dismantling it. It's not exactly new (it first rolled out in Windows 95), but it's worth reviewing in some detail because it's the best tool the folks at Redmond provide to find out what's inside your system and how Windows is configured.

The System Summary dialog appears when you first start System Information (see Figure 6.8). It lists Windows version, system name, processor type and speed, memory size, and other hardware and Windows features.

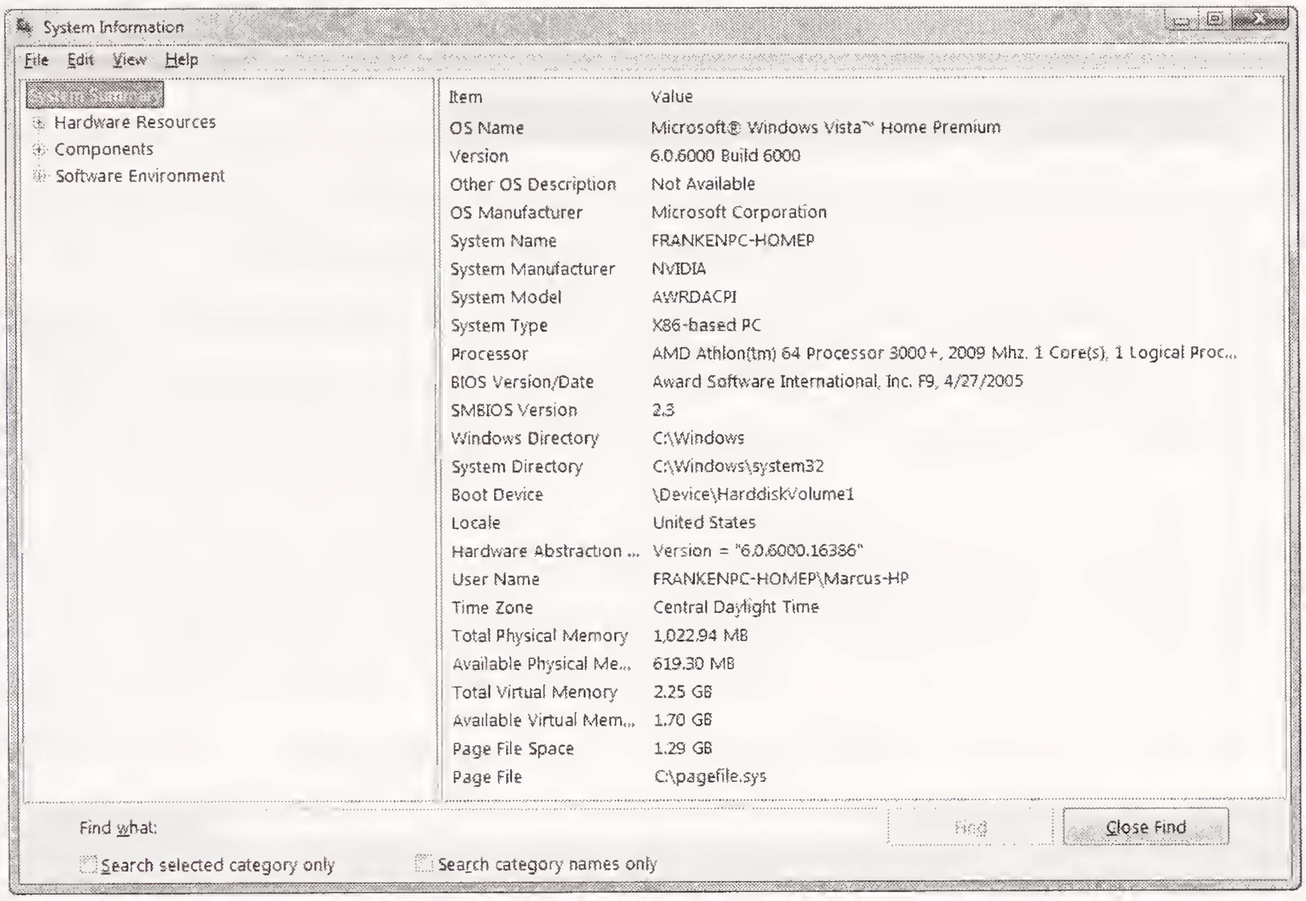
To dig deeper into your system, expand the Hardware Resources, Components, and Software Environment sections in the left pane.

Hardware resources include IRQ, DMA, I/O port addresses, and memory addresses, all of which used to be big problems for users before the advent of PnP and the end of ISA slots (although legacy ports such as serial, parallel, and PS/2 mouse can still be troublesome). The most useful items in Hardware Resources include

- Conflicts/Sharing—Lists any devices that use the same resources as another—and if one or both devices is a legacy device, you've got problems!
- Forced Hardware—Lists any devices that have been manually configured (instead of letting PnP do its magic).

TIP

Forced hardware is hardly ever necessary today. If you see forced hardware listed in MSInfo32, open the Device Manager and select automatic configuration for each device listed as a forced hardware device after noting the current settings. If the devices work properly after selecting auto configuration, you've just made it easier for PnP to work for every device. PnP works best when no devices are using manual settings.



Item	Value
OS Name	Microsoft® Windows Vista™ Home Premium
Version	6.0.6000 Build 6000
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	FRANKENPC-HOMEP
System Manufacturer	NVIDIA
System Model	AWRDACPI
System Type	X86-based PC
Processor	AMD Athlon(tm) 64 Processor 3000+, 2009 Mhz, 1 Core(s), 1 Logical Proc...
BIOS Version/Date	Award Software International, Inc. F9, 4/27/2005
SMBIOS Version	2.3
Windows Directory	C:\Windows
System Directory	C:\Windows\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction ...	Version = "6.0.6000.16386"
User Name	FRANKENPC-HOMEP\Marcus-HP
Time Zone	Central Daylight Time
Total Physical Memory	1,022.94 MB
Available Physical Me...	619.30 MB
Total Virtual Memory	2.25 GB
Available Virtual Mem...	1.70 GB
Page File Space	1.29 GB
Page File	C:\pagefile.sys

Figure 6.8

Use System Information's System Summary to find out how fast your processor is, how much RAM Windows is using, BIOS version, and other helpful stats.

The Components section lists the device hardware and the drivers that make the hardware work (or not work, if you're having a bad day).

If you're incredibly obsessed with knowing every detail of your system, you can view each of the more than 15 items in this category. However, if you're having hardware problems, go directly to Problem Devices, which lists each device that's down for the count, along with its PnP Device ID and the Device Manager error code text.

The last section, Software Environment, is where MSInfo32 really shines as a Windows Vista troubleshooting tool. It displays system drivers, signed drivers (and remember, in Windows Vista x64, all you can use are signed drivers), environmental variables (such as the location of TEMP and TMP files), print jobs, network connections, services, loaded modules, and much more.

TIP

As you use the Components category, pay particular attention to the Status listed for each item. "Error" indicates the device is disabled or not working for some other reason. Plunge into Device Manager (see Chapter 15 for details) to solve the problem.

TIP

Use the Find tool at the bottom of the MSInfo32 display to locate information. By default, all text is searched, unless you specify the option to search the selected category only or to search category names only.

Windows Anytime Upgrade

Thanks to Windows Anytime Upgrade, if you have the Home Basic, Home Premium, or Business editions, getting your hands on Ultimate is less expensive than you thought (Home Basic users can also upgrade to Home Premium through Anytime Upgrade). Click the Windows Anytime Upgrade button to get started. If you're still not sure Ultimate's your best move, review the differences between Windows Vista Ultimate and your current edition, or just click the Upgrade button. Follow the prompts, provide payment when requested, download the preparation file, dig out your Windows Vista DVD, and you'll soon be enjoying everything that Windows Vista Ultimate has to offer.

Windows Anytime Upgrade provides a cost-effective way to move to the best edition of Windows, especially for users running systems bundled with other Windows Vista editions.

NOTE

If you've been a laggard about activating your Windows Vista installation, get over it. You must activate Vista before you can upgrade it. And, if you "forgot" to type in your product key when you installed it, you must do that as well before you can activate and upgrade. Contact your hardware vendor if you have questions about running Anytime Upgrade on your system if you did not receive a Windows Vista DVD.

Feature Rating: ***Windows Anytime Upgrade***

Offline Files

If you already use Offline Files to work with network files away from the office (or home) network, Windows Vista's version looks different but provides a feature set comparable to its Windows XP counterpart. Windows Vista provides Offline Files (available in Business, Enterprise and Ultimate editions only) with its own dialog, rather than using a tab of the Folder Options dialog as in Windows XP, but it's largely similar to its predecessor in operation. To use a network share offline, right-click a network share and select Always Available Offline.

Instead of cluttering up a single dialog with an overwhelming number of options, Windows Vista's Offline Files uses a multitabbed interface. Use the General tab to disable (or enable) Offline Files, open the Sync Center (which automatically syncs offline work with online originals when you reconnect to the network), or view offline files. Click the Disk Usage tab to see (or alter) how much of your hard disk is used for offline files: The default is 22% of your disk space, up from 10% in Windows XP. The Encryption tab is used to encrypt (or decrypt) your offline files. Use the Network tab to specify whether to work offline automatically with slow network connections, and how often to check the connection speed.

TIP

If you use Offline Files to work with sensitive information, be sure to use the Encryption option to protect your files from snooping.

Sync Center

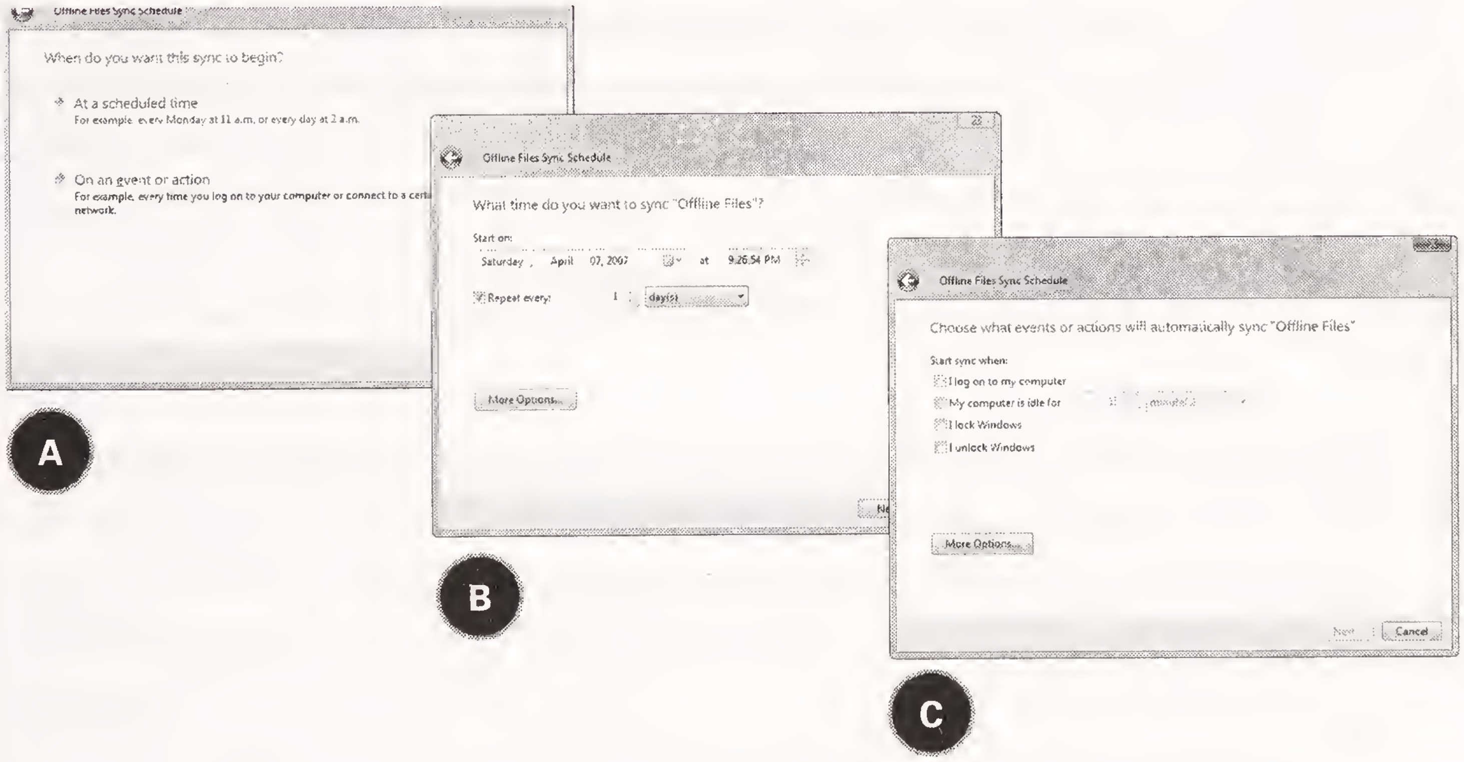
Windows Vista's Sync Center is a lot less exciting than the name might suggest. After using Microsoft's wonderful SyncToy for Windows XP (powerful, and hardly a "toy") to set up all types of customized synchronization setups between network shares, USB thumb drives and hard disk folders, external hard disks and internal hard disk folders, and so on, I was expecting Sync Center to be more of the same. It's not.

To see existing sync relationships, click 'View Sync Partnerships' in the Tasks pane. If you have enabled offline files with the Offline Files applet (see previous section), Offline Files are listed here.

TIP

SyncCenter version 1.4 and above works with Windows Vista as well as XP. Get it from http://www.microsoft.com/windowsxp/using/digitalphotography/prophoto/synctoy.mspx

Click Schedule to open the Offline Files Sync Schedule wizard. On the first dialog, select the items you want to synchronize, and click Next. On the next dialog, select whether you want to synchronize at a particular time or on an event or action (Figure 6.9 A). If you select a particular time, use the next dialog (Figure 6.9 B) to set up date, time, and frequency. If you select an event or action, use the next dialog (Figure 6.9 C) to set up the event(s) that trigger synchronization.


Offline Files Sync Schedule
Offline Files Sync Schedule
Offline Files Sync Schedule
More Options...
More Options...
Next
Cancel
A
B
C

When do you want this sync to begin?

At a scheduled time
For example, every Monday at 11 a.m. or every day at 2 a.m.

On an event or action
For example, every time you log on to your computer or connect to a certa
network.

What time do you want to sync "Offline Files"?

Start on: Saturday , April 07, 2007 at 9:26:54 PM

☑ Repeat every: 1 day(s)

Choose what events or actions will automatically sync "Offline Files"

Start sync when:

☐ I log on to my computer

☐ My computer is idle for minute(s)

☐ I lock Windows

☐ I unlock Windows

A Specifying trigger type.

B Specifying a specific time.

C Specifying actions.

Figure 6.9

Configuring a trigger event for synchronization with offline files.

Click More Options to specify whether to start or stop sync based on the system's current power source or power management configuration.

Sync Center can also work with digital media players connected to your system. They are displayed when you click Sync Center's Set Up New Sync Partnerships task. However, when you click Set Up in Sync Center, Sync Center actually calls on Windows Media Player to set up synchronization. Sync Center ignores USB flash drives, hard disks or other types of external devices.

To learn more about file synchronization with Windows Media Player, see "Portable Media Player Support," Chapter 8, p. 202.

For what it does, Sync Center works well, and with the understanding that you can use SyncToy for other types of synchronization...

Feature Rating: ***Sync Center***

Printers

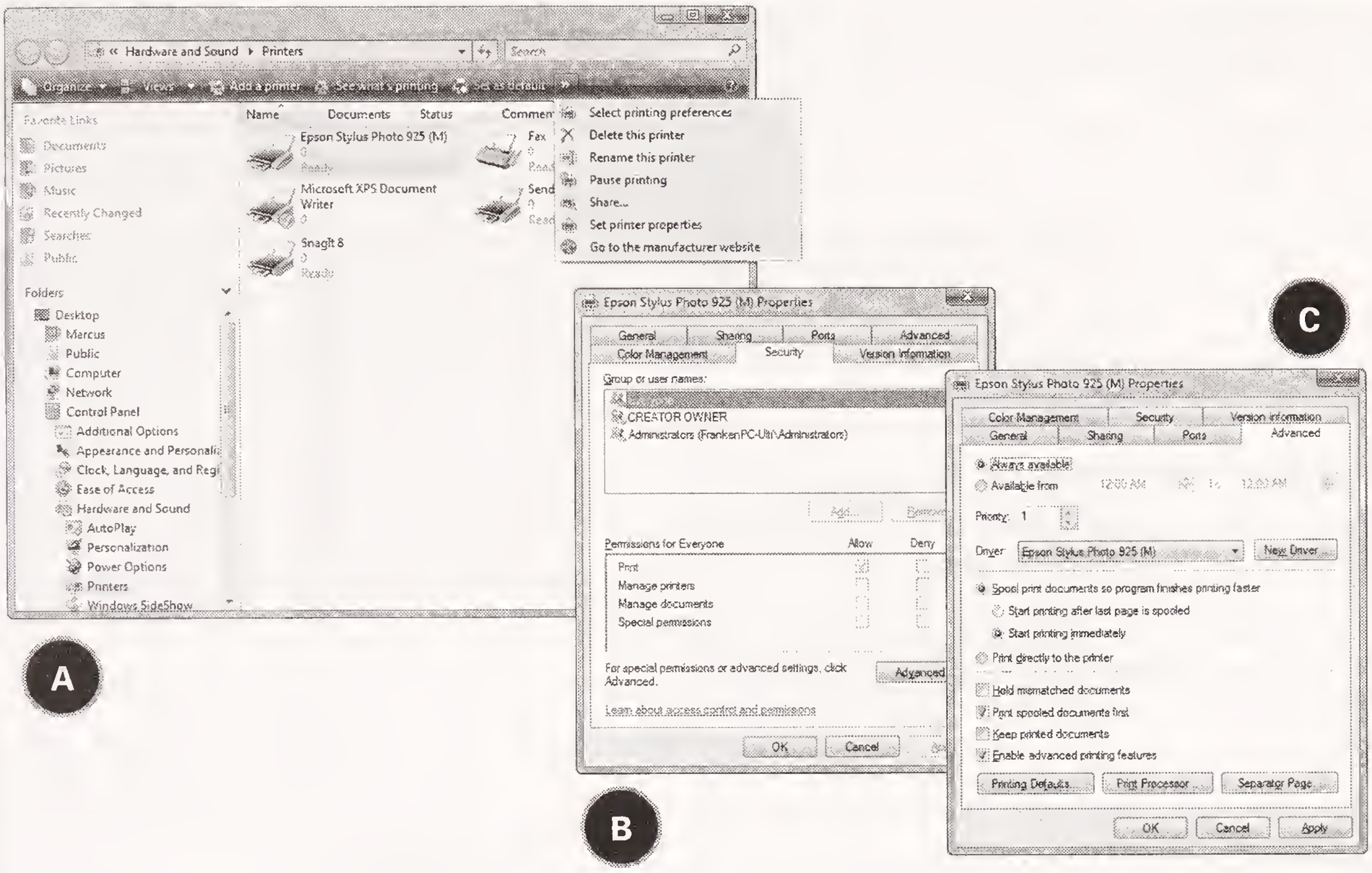
The Printers folder has gone through an extensive remodeling in Windows Vista. Although you can still right-click a printer icon and select Properties to manage the printer, most management tasks can now be performed from a top-level menu (see Figure 6.10 A).

One "new" twist for users transitioning from less-secure Windows versions is the Security tab in the printer properties sheet (refer to Figure 6.10 B). Normally, this tab shows which users can use or manage the printer or documents. However, you can also specify which groups of users can use or manage the printer or documents. Right-click the printer, select Run as Administrator (a UAC-protected function) from the right-click menu, select Properties from the Run as Administrator submenu and open the Security tab.

If you're finding your ink, toner, or printer paper consumption going way up, but you're not printing any more than normal, maybe other users are sneaking onto your printer. Sure, you could prevent them from using the printer entirely, but chances are the real problem is after-hours use. Whether you're trying to prevent your across-the-cubicle neighbor from printing a full-color resume on the company's dime or keeping your kids from burning through a ream of paper printing posters of their latest teen heartthrobs, use the Advanced tab of your printer's properties sheet (Figure 6.13 C) to specify when the printer is available.

TIP

To change settings on the Advanced or Security tabs, right-click the printer, select Run As Administrator, Properties, then click the appropriate tab. Note that Run as Administrator is protected by UAC.


« Hardware and Sound ▸ Printers
Search
Organize
Views
Add a printer
See what's printing
Set as default
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Desktop
Marcus
Public
Computer
Network
Control Panel
Additional Options
Appearance and Personaliz
Clock, Language, and Regi
Ease of Access
Hardware and Sound
AutoPlay
Personalization
Power Options
Printers
Windows SideShow
Name
Documents
Status
Comments
Epson Stylus Photo 925 (M)
Microsoft XPS Document Writer
SnagIt 8
Fax
Send
Select printing preferences
Delete this printer
Rename this printer
Pause printing
Share...
Set printer properties
Go to the manufacturer website
Epson Stylus Photo 925 (M) Properties
General
Sharing
Ports
Advanced
Color Management
Security
Version Information
Group or user names:
CREATOR OWNER
Administrators (FrankenPC-Ult\Administrators)
Add...
Remove
Permissions for Everyone
Allow
Deny
Print
Manage printers
Manage documents
Special permissions
For special permissions or advanced settings, click Advanced.
Advanced
Learn about access control and permissions
OK
Cancel
Epson Stylus Photo 925 (M) Properties
● Always available
○ Available from 12:00 AM To 12:00 AM
Priority: 1
Driver: Epson Stylus Photo 925 (M)
New Driver...
● Spool print documents so program finishes printing faster
○ Start printing after last page is spooled
● Start printing immediately
○ Print directly to the printer
☐ Hold mismatched documents
☑ Print spooled documents first
☐ Keep printed documents
☑ Enable advanced printing features
Printing Defaults...
Print Processor...
Separator Page...
OK
Cancel
Apply
A
B
C

A The new top-level printer management menu.

B Viewing group properties (Security tab).

C Scheduling printer availability (Advanced tab, using Run as Administrator).

Figure 6.10

Using the Printers folder.

⇨ For more information, see "Managing User Accounts and Family Safety," Chapter 14, p. 329.

Everybody has to print something, sometime, and Windows Vista makes it easier than before to configure and control printing.

Feature Rating: **Printers**

AutoPlay

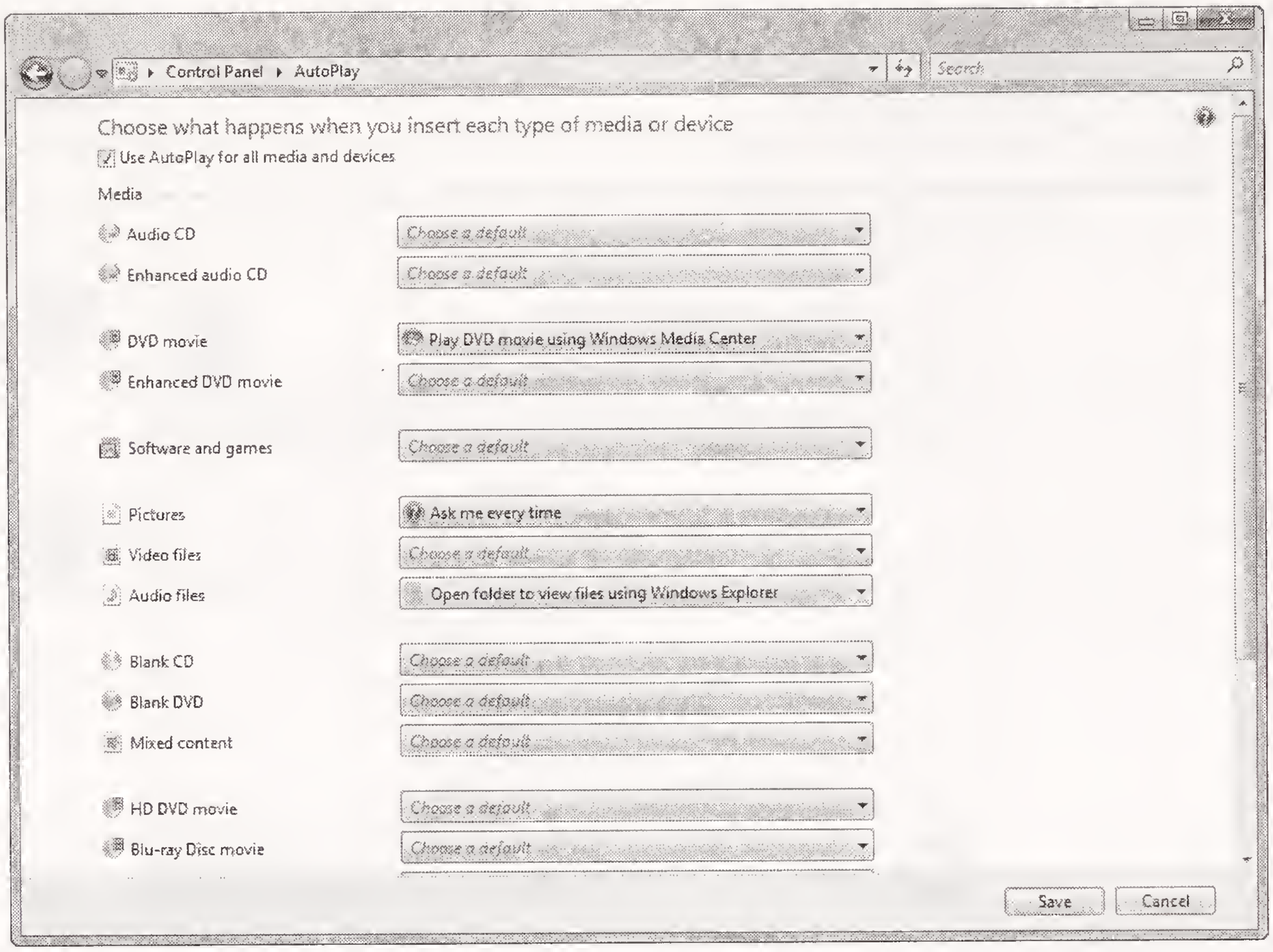
While AutoPlay (which automatically plays or views the contents of CDs, DVDs, and other removable-media drives when you insert them) isn't exactly new, the new AutoPlay icon in Control Panel provides a centralized way to globally configure AutoPlay options.

To disable AutoPlay, clear the check mark at the top of the AutoPlay menu (see Figure 6.11). You can also select default actions for virtually any type of removable media on the market, from audio CDs to Blu-Ray DVDs, and for various types of content (music, pictures, and more).

TIP

To control which users can access a particular printer, create a group that contains those users, then use the Security tab to block those users. For example, you can prevent your children from using the expensive color laser in the home office while sharing it with the grownups.

Here's how: Assign their accounts to a group called "Kids," select the Run as Administrator option for that printer, select Properties, click the Security tab, select the group "Kids," and specify Deny for printer access.



Choose what happens when you insert each type of media or device

☑ Use AutoPlay for all media and devices

Media

Audio CD	Choose a default
Enhanced audio CD	Choose a default
DVD movie	Play DVD movie using Windows Media Center
Enhanced DVD movie	Choose a default
Software and games	Choose a default
Pictures	Ask me every time
Video files	Choose a default
Audio files	Open folder to view files using Windows Explorer
Blank CD	Choose a default
Blank DVD	Choose a default
Mixed content	Choose a default
HD DVD movie	Choose a default
Blu-ray Disc movie	Choose a default

Figure 6.11

The new AutoPlay control center.

The options available for each device or media type vary with the applications installed on your system. Defaults typically include

- Take no action (nothing happens when you insert the specified media type or content type)
- Ask me every time (displays the familiar AutoPlay menu for your selections)
- Open folder with Windows Explorer
- Use content (play, burn) with Windows Media Player or Windows Media Center

A single Save button is provided for saving changes to all selections, and a Reset All Defaults button at the bottom of the list sets everything back to normal if you foul up your settings.

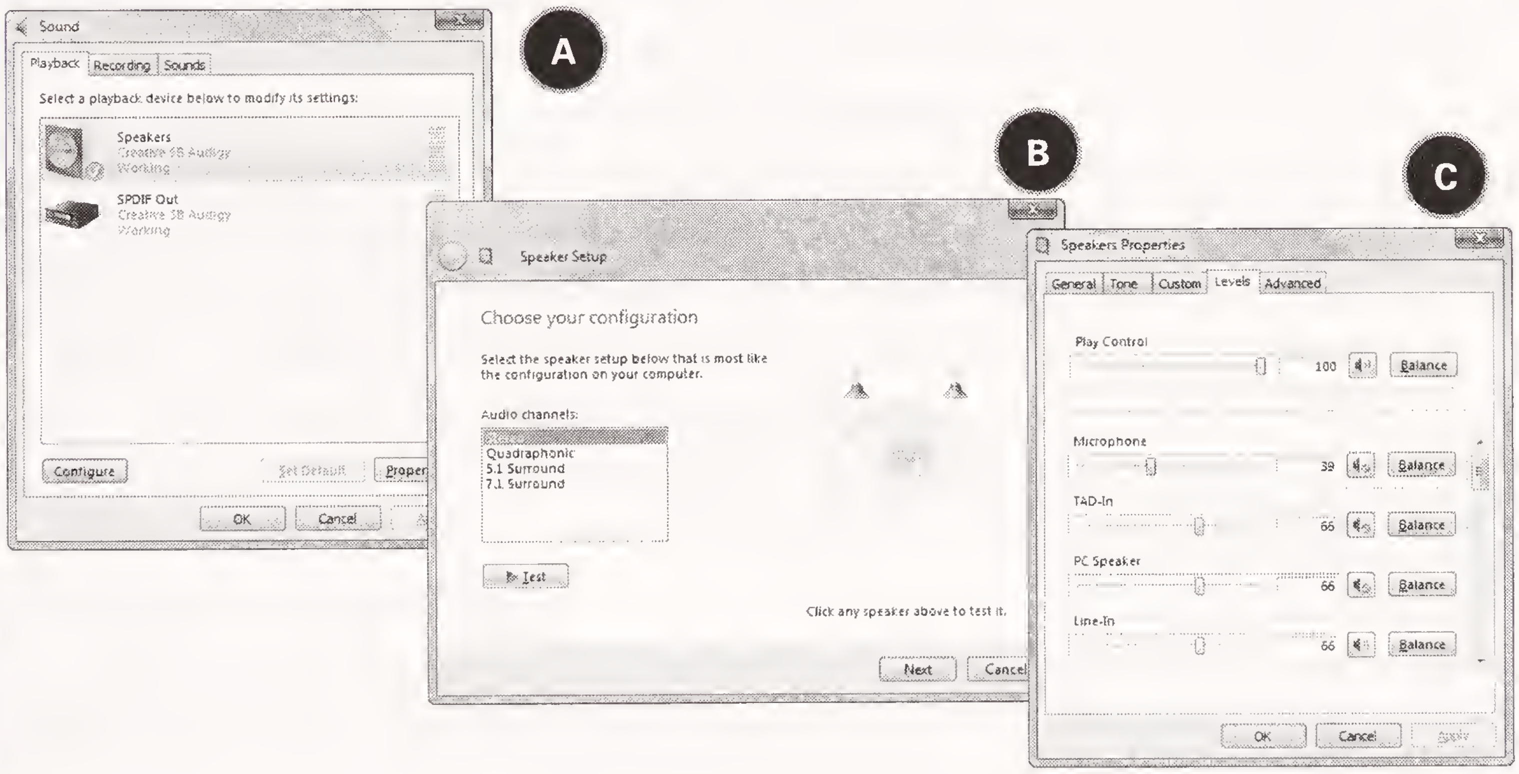
If you prefer, you can still use the AutoPlay tab in a particular drive's properties sheet to configure AutoPlay events, but the new AutoPlay control center makes it easier than ever to make AutoPlay work for you, or knock it on the head if you dislike it. The AutoPlay applet finally makes managing AutoPlay easy.

Feature Rating: ***AutoPlay***

Sound

The Sound applet has gone through significant changes in Windows Vista, resulting in a more logical design that makes it easier to configure surround sound hardware. The Playback tab (Figure 6.12 A) is used to configure speakers, digital audio jacks, and similar devices. Click Configure to bring up the Speaker Setup dialog shown in Figure 6.12 B. Use this dialog to select your speaker configuration and to test each speaker individually.

Click Properties to bring up the multi-tabbed Speakers Properties dialog. Click Tone to adjust bass and treble balance. Use the Custom tab (when available) to select digital output only from audio solutions that feature digital and analog output. Click Levels (Figure 6.12 C) to adjust playback and recording levels and balance settings. Click Advanced to choose and test the sample rate and bit depth you choose as default, and to enable signal enhancements and other features.


A
B
C
Sound
Playback
Recording
Sounds
Select a playback device below to modify its settings:
Speakers
Creative SB Audigy
Working
SPDIF Out
Creative SB Audigy
Working
Configure
Set Default
Proper
OK
Cancel
Speaker Setup
Choose your configuration
Select the speaker setup below that is most like the configuration on your computer.
Audio channels:
Stereo
Quadraphonic
5.1 Surround
7.1 Surround
Test
Click any speaker above to test it.
Next
Cancel
Speakers Properties
General
Tone
Custom
Levels
Advanced
Play Control
100
Balance
Microphone
39
Balance
TAD-In
66
Balance
PC Speaker
66
Balance
Line-In
66
Balance
OK
Cancel
Apply

A The Playback tab.

B Configuring and testing speakers.

C The Levels tab.

Figure 6.12

Using the Sound applet.

With enhanced support for 5.1 and 7.1 surround audio and testing features, the Sound applet is ready for the increasing demands we place on PC audio.

Feature Rating: ***Sounds***

Color Management

The Color Management feature in Control Panel is new in Windows Vista, reflecting the increasing concern for accurate color display and reproduction among Windows users, especially those involved in graphics arts or photography. Previously, color management was performed through the properties sheets for individual devices (inkjet printers, CRT or LCD displays, and so forth).

TIP

If you scan photos or slides, you should also create a color profile to assign to your scanner or all-in-one device's scanning function. Many scanners include a calibrated test target. Follow the directions provided by the vendor to use it to create the color profile.

Windows Vista includes a number of Windows Color System (WCS) color profiles. Click the All Profiles tab to view these profiles, and click Advanced to view the default settings for how these profiles are used with different types of images and devices.

If you are not satisfied with the default profiles (for example, a photo looks drastically different when printed than when displayed), click the Devices tab to select a device, and click the Use My Settings for This Device check box. Click Add to add a color profile you've downloaded from the device vendor (sometimes as part of a printer driver), created with a monitor calibration program such as Adobe Gamma (bundled with Adobe Photoshop and Photoshop Elements) or by a monitor calibration and profiling device such as Pantone's huey. On a new installation, there typically won't be any custom profiles associated with any devices. Instead, the default Windows profiles are used. After you add one or more profiles, select the one you want to use as a default and click Set as Default Profile.

Color Management doesn't display any color profiles for devices unless you assign them, even though defaults are in use, making the unwary user think that no color management is going on at all.

However, for making Color Management an integral part of the Control Panel, where it's always belonged...

Feature Rating: ***Color Management***

Default Programs

The Default Programs applet, also new in Windows Vista, provides a one-stop shop for solving the problems caused by so-called "association grabbers," those programs that grab file associations by virtue of being installed last, as well as configuring which programs to use for particular tasks:

- Set Your Default Programs—Use this option to specify what file types each installed program can open, or to use a particular program to open all its supported file types by default.
- Associate a File Type or Protocol with a Program—Use this option to specify the preferred program for each file type you use. For example, you might assign .bmp (bitmaps) to Windows Photo Gallery, but .tif (TIFF files) to Adobe Photoshop Elements.
- Change AutoPlay Settings—This opens the AutoPlay dialog discussed earlier in this chapter. See "AutoPlay," p. 139, for details.
- Set Program Access and Computer Defaults—Use this option to specify which programs to use for web browsing, email, media playing, IM, and Java Virtual Machine and whether to permit access to alternative programs. You can specify whether to have only Microsoft programs, only non-Microsoft programs, or a "best-of-breed" mix-and-match collection.

Instead of fiddling around with the File Types tab in the Folder Options menu, Default Programs provides an easy way to sort out what's in charge of a particular file type.

Feature Rating: ***Default Programs***

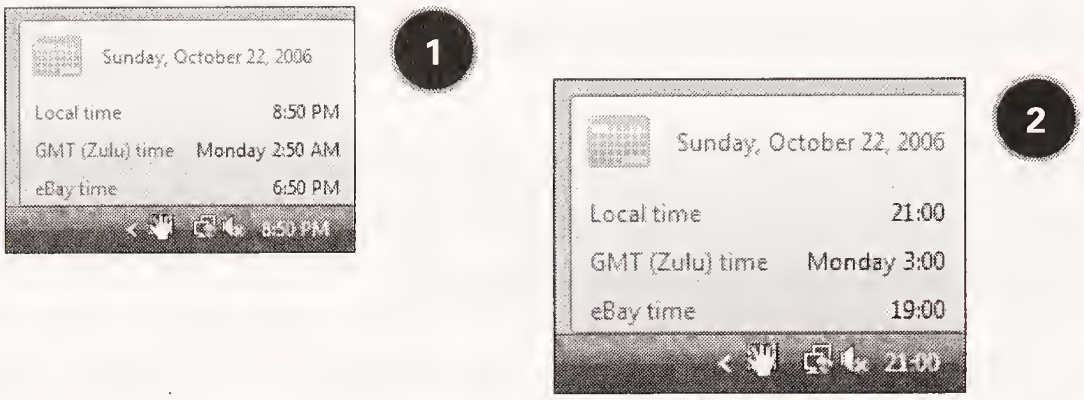
Date and Time

Use this applet to change the date and time, change time zone, configure and display up to two additional clocks (a useful trick for transcontinental travelers or managers of divisions in different time zones), or configure Internet time synchronization from servers such as time.windows.com.

When you add additional clocks, you can see them by hovering your mouse over the clock in the system tray (see Figure 6.13). Note that you can use any name you want for each additional clock. I used "eBay time" for the Pacific time clock because all U.S. eBay auctions run on Pacific time, and Zulu for GMT (Zulu's the military term for GMT).

① 12-hour format

② 24-hour format



Sunday, October 22, 2006
Local time 8:50 PM
GMT (Zulu) time Monday 2:50 AM
eBay time 6:50 PM
8:50 PM

Sunday, October 22, 2006
Local time 21:00
GMT (Zulu) time Monday 3:00
eBay time 19:00
21:00

Figure 6.13

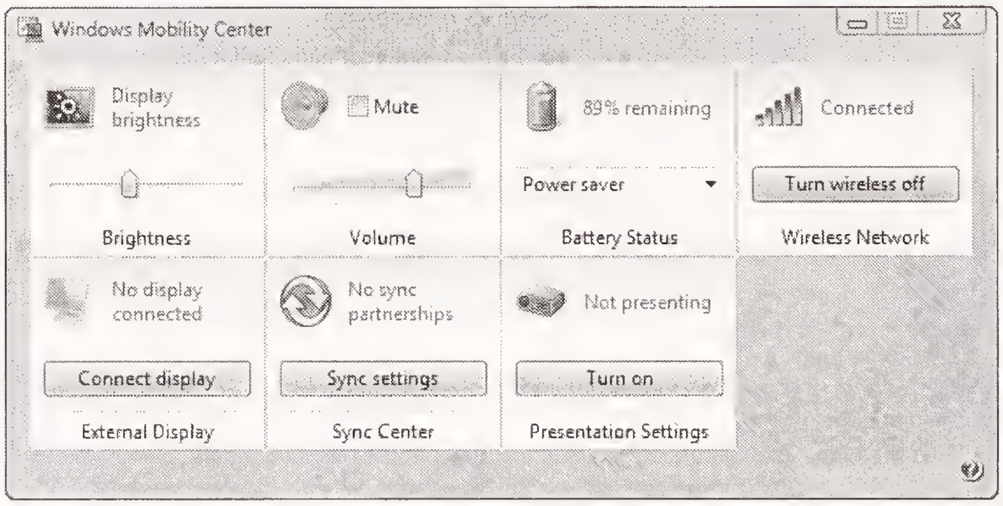
Viewing additional clocks from the Windows Vista desktop in standard AM/PM and 24-hour formats.

By adding the capability to display additional clocks, Microsoft makes managing work and play in different time zones easier than ever.

👍 *Feature Rating:* ***Clocks***

Windows Mobility Center

The Windows Mobility Center (Figure 6.14) offers one-stop control of display brightness, audio volume, power scheme and battery life, wireless network, external display, Sync Center, and presentation settings. Use it to quickly configure your notebook or laptop computer for travel, presentation, or other special circumstances.



Windows Mobility Center

Display brightness — Brightness

☐ Mute — Volume

89% remaining — Power saver — Battery Status

Connected — Turn wireless off — Wireless Network

No display connected — Connect display — External Display

No sync partnerships — Sync settings — Sync Center

Not presenting — Turn on — Presentation Settings

Figure 6.14

The Windows Mobility Center makes configuring your notebook for different uses easy.

TIP

Your Own Version of 24

Do you prefer a 24-hour clock? Open the Regional and Language Options icon in Control Panel, make sure your current format is selected, and click Customize This Format. Click the Time tab, and change the default time format from h:mm:ss tt to H:mm:ss. Click Apply and then click OK to complete the change. Your desktop clock will immediately switch to a 24-hour format.

Improving Performance with ReadyBoost

ReadyBoost is one of the most controversial and misunderstood new features in Windows Vista. Essentially, ReadyBoost converts compatible flash memory into a disk cache to boot disk read performance. The controversy comes from the fact that many popular models of USB flash memory devices aren't fast enough to work with ReadyBoost, and that Microsoft leaves it up to third-party websites to provide listings of which devices give your system a boost, and which ones don't. The misunderstandings come from the fact that ReadyBoost is designed to speed up random disk reads (4K block sizes) and has no effect on sequential reads or disk writes.

Checking Your USB Drive for ReadyBoost Compatibility

To see whether your current USB flash memory device can speed up your system, make sure it has at least 256MB of free space. Then, remove it from your system and plug it in again. From the AutoPlay menu, select Speed Up My System Using Windows ReadyBoost (see Figure 6.27).

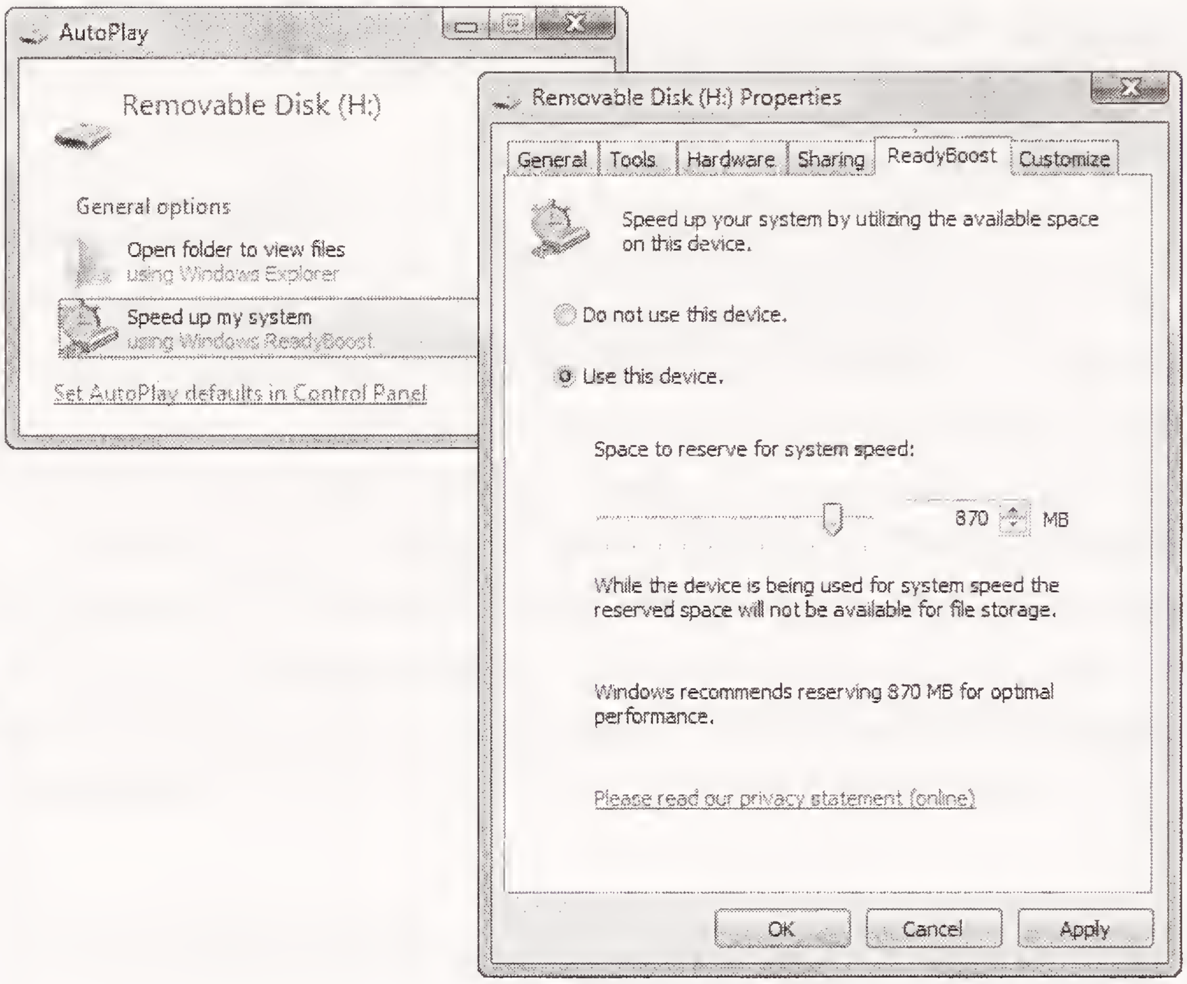
If your drive is fast enough for ReadyBoost, select Use This Device from the ReadyBoost tab of the properties sheet, and, for best results, reserve the default space recommended. Click Apply; then click OK. Windows Vista creates a file called ReadyBoost.sfcache in the root folder of the flash drive (delete this file to stop ReadyBoost from using your drive, or click the Do Not Use This Device radio button on the ReadyBoost dialog).

A USB drive that is not fast enough or lacks sufficient free space will display an error message instead of the dialog shown in Figure 6.15. Drives that are not fast enough often feature mixtures of fast and slow flash memory; a drive that ReadyBoost supports must have all fast memory.

TIP

ReadyBoost Tweaks and Tricks If you don't see the ReadyBoost dialog shown in Figure 6.15, try these tweaks and tricks to shape up your drive:

- Format the drive with the NTFS file system.
- Try a different USB port. The USB ports on the rear of the system may be faster than the ones on the front of the system (which are sometimes USB 1.1, rather than USB 2.0).
- If the drive has other files, remove them and reformat the drive.
- If the drive is 256MB or smaller, forget it! It won't work with ReadyBoost.
- For the greatest boost in performance, use a compatible USB flash drive with at least the same amount of free space as the memory on your system.


AutoPlay
Removable Disk (H:)
General options
Open folder to view files
using Windows Explorer
Speed up my system
using Windows ReadyBoost
Set AutoPlay defaults in Control Panel
Removable Disk (H:) Properties
General
Tools
Hardware
Sharing
ReadyBoost
Customize
OK
Cancel
Apply

Speed up your system by utilizing the available space on this device.

○ Do not use this device.

● Use this device.

Space to reserve for system speed: 870 MB

While the device is being used for system speed the reserved space will not be available for file storage.

Windows recommends reserving 870 MB for optimal performance.

Please read our privacy statement (online)

Figure 6.15

Using a USB flash memory drive for ReadyBoost compatibility.

NOTE

ReadyBoost-Compatible Device Resources Some vendors are now offering lines of USB flash memory drives specifically designed for ReadyBoost. The most comprehensive unofficial list of ReadyBoost-compatible USB devices is located at http://www.grantgibson.co.uk/misc/readyboost/

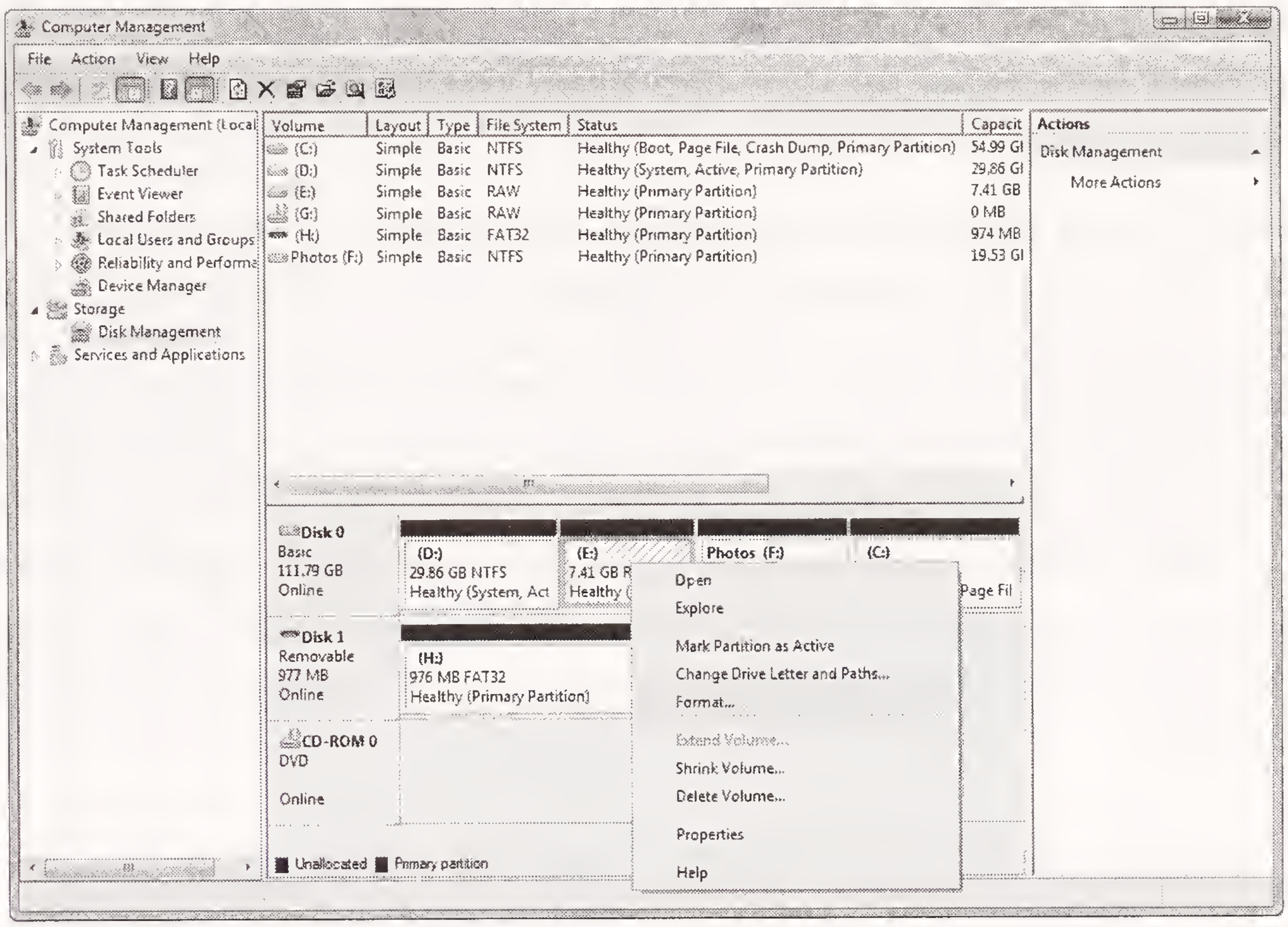
ReadyBoost provides speedups for any application that uses random disk reads. Some users indicate they see more improvement in performance after using the same program a couple of times than they do initially—your mileage may (also) vary.

Disk Management

The Disk Management tool in Windows Vista looks similar to its Windows XP predecessor but has some new features, most notably the capability to shrink a dynamic disk volume to free up space for use as a different drive letter or a different operating system. As in Windows XP, Disk Management can also extend an existing dynamic disk volume into unallocated space to make it larger.

To start Windows Vista's UAC-protected Disk Management tool, right-click Computer and select Manage. When the Computer Management Console opens, click Storage and then click Disk Management.

Figure 6.16 shows a typical view of Disk Management on a system with two hard disks and a USB flash memory drive.


Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Reliability and Performa
Device Manager
Storage
Disk Management
Services and Applications
Actions
Disk Management
More Actions
Disk 0
Basic
111.79 GB
Online
(D:)
29.86 GB NTFS
Healthy (System, Act
(E:)
7.41 GB R
Healthy (
Photos (F:)
(C:)
Page Fil
Disk 1
Removable
977 MB
Online
(H:)
976 MB FAT32
Healthy (Primary Partition)
CD-ROM 0
DVD
Online
Unallocated
Primary partition
Open
Explore
Mark Partition as Active
Change Drive Letter and Paths...
Format...
Extend Volume...
Shrink Volume...
Delete Volume...
Properties
Help

Volume	Layout	Type	File System	Status	Capacit
(C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	54.99 GI
(D:)	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	29.86 GI
(E:)	Simple	Basic	RAW	Healthy (Primary Partition)	7.41 GB
(G:)	Simple	Basic	RAW	Healthy (Primary Partition)	0 MB
(H:)	Simple	Basic	FAT32	Healthy (Primary Partition)	974 MB
Photos (F:)	Simple	Basic	NTFS	Healthy (Primary Partition)	19.53 GI

Figure 6.16

Preparing to format a RAW (unallocated) disk volume with Disk Management.

You can use Disk Management to

- Prepare a new hard disk as additional storage
- Change the drive letter on a nonsystem drive
- Format a volume (Make sure any data it contains is backed up to a different location.)
- Convert a drive from basic to dynamic storage
- Adjust the size of an existing dynamic storage volume

To perform a task, right-click the drive and select the task you want to perform from the right-click menu. Disk Management runs the appropriate wizard to step you through the process.

Converting a Drive to NTFS

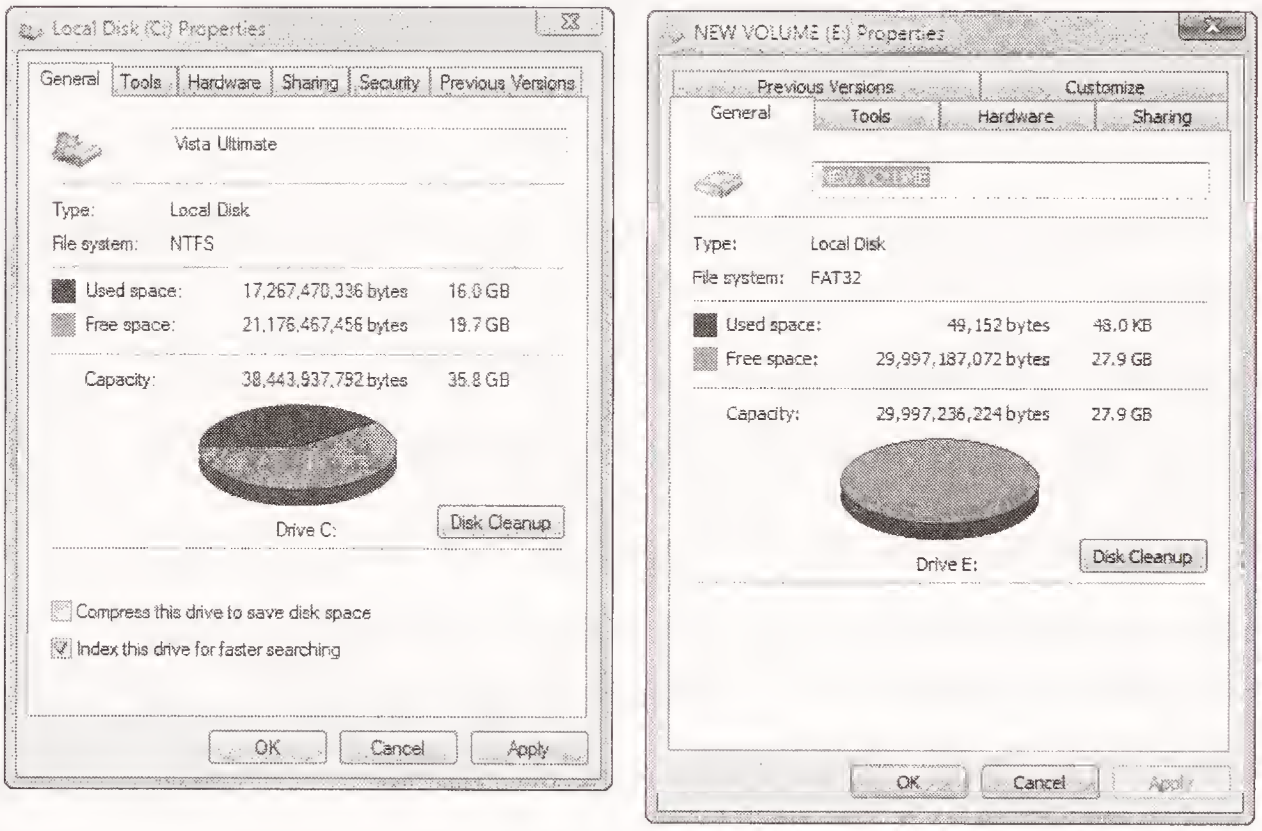
Windows Vista is designed to work with the NTFS file system, which is much more secure than the old (make that really old) FAT-based system used by Windows 9x/Me. However, you might

WARNING

Changes in NTFS Make Older Disk Utilities Dangerous Although the native file system of Windows NT 4.0, Windows 2000, Windows XP, and Windows Vista is called NTFS, Vista ain't using your daddy's NTFS! Before you use a third-party tool to fiddle with your disk partitions on drives that contain important information, make sure it understands Vista's flavor of NTFS. An update, or even a version upgrade, may be necessary to avoid frying your file system—and your files.

still have a FAT32 drive on your system, particularly if you upgraded from one of the older systems, or reused a drive once used by those operating systems without reformatting it.

If you want to use the advanced features of dynamic storage on a particular drive, it must be converted to NTFS before you can convert it from basic to dynamic storage. To find out what file system is in use, open Computer, right-click the drive, and select Properties. The General tab displays the file system. In Figure 6.17, the hard disk on the right is using the FAT32 file system. It can be accessed by Windows 98 and Me, as well as newer Windows versions. However, because it does not use NTFS, you cannot use NTFS compression or encryption, it cannot be used as a dynamic disk, and it does not permit user or group security settings. The disk label may as well say "Kick Me"!


Local Disk (C:) Properties
General
Tools
Hardware
Sharing
Security
Previous Versions
Drive C:
Disk Cleanup
OK
Cancel
Apply
NEW VOLUME (E:) Properties
Previous Versions
Customize
General
Tools
Hardware
Sharing
Drive E:
Disk Cleanup
OK
Cancel
Apply

Vista Ultimate

Type: Local Disk
File system: NTFS

Used space:	17,267,470,336 bytes	16.0 GB
Free space:	21,176,467,456 bytes	19.7 GB
Capacity:	38,443,937,792 bytes	35.8 GB

☐ Compress this drive to save disk space
☑ Index this drive for faster searching

NEW VOLUME

Type: Local Disk
File system: FAT32

Used space:	49,152 bytes	48.0 KB
Free space:	29,997,187,072 bytes	27.9 GB
Capacity:	29,997,236,224 bytes	27.9 GB

Figure 6.17

Hard disks with NTFS (left) and FAT32 (right) file systems.

If you don't need dual-boot access to a hard disk running a FAT file system, you should convert it to NTFS to enhance its security, permit the option to convert it to a dynamic disk, and make the drive less likely to become corrupted. How do you do it without reformatting the drive (and wiping out all your data in the process)?

The command-line `Convert` program is the tool you need. For example, to convert drive E: from FAT32 to NTFS, open a command prompt as Administrator, and enter this command:

```
convert e:/fs:ntfs
```

For other drives, replace `e`: with the appropriate drive letter.

The process can take a few minutes (or more), depending on the size of your hard disk and the number of files it contains. After the drive has been converted, you can convert it from basic to dynamic using Disk Management if you need the additional features of a dynamic disk.

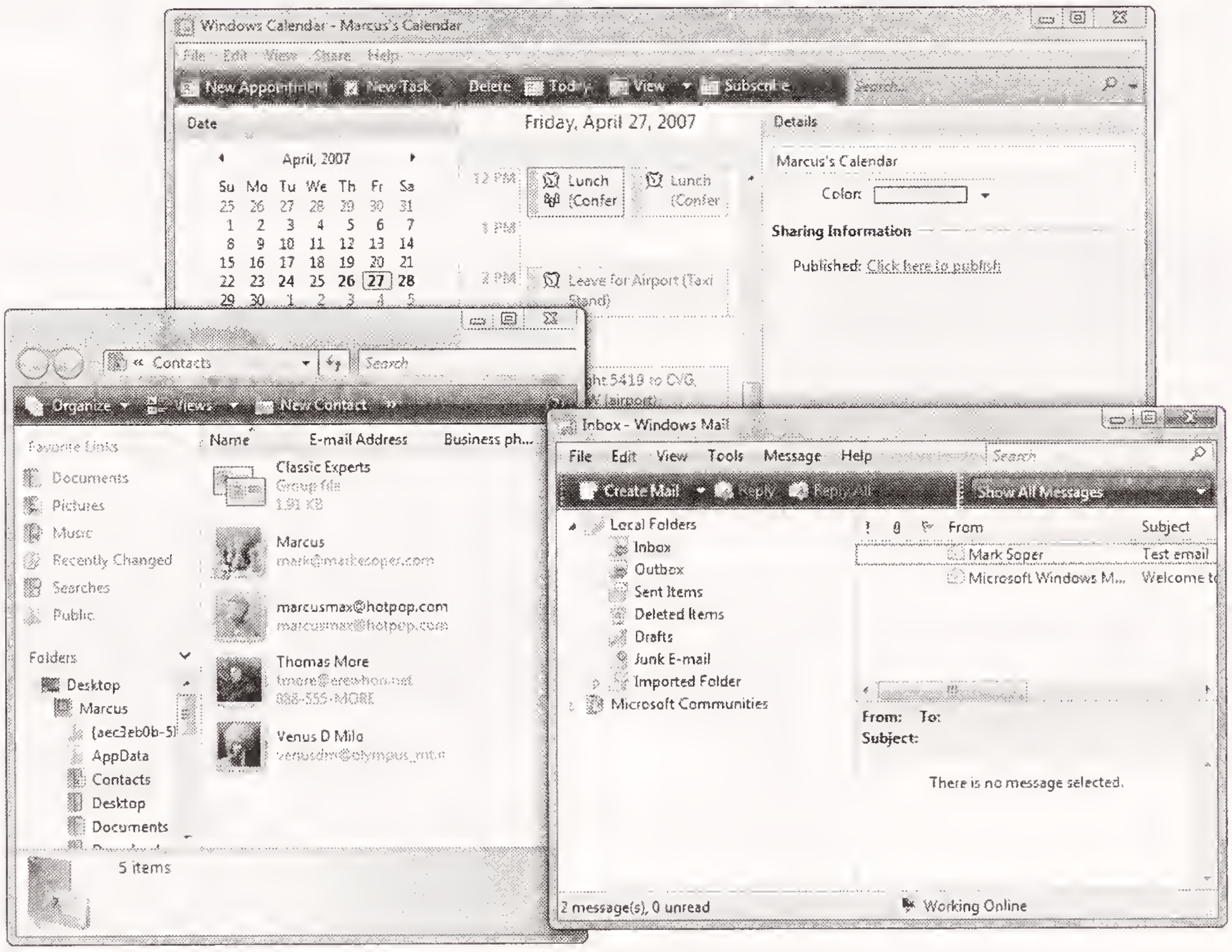
Chapter Seven

Managing Your Contacts with Vista

IN THIS CHAPTER

- Staying in Touch with Windows Vista's New Email, Meeting, Calendar, and Fax Tools
- Using Windows Mail
- Using Windows Contacts
- Using Windows Meeting Space
- Using Windows Calendar
- Using Windows Fax and Scan
- Best and Worst Practices in Contact Management

Staying in Touch with Windows Vista's New Email, Meeting, Calendar, and Fax Tools


Windows Calendar - Marcus's Calendar
New Appointment
New Task
Delete
Today
View
Subscribe
Date
April, 2007
Friday, April 27, 2007
Details
Marcus's Calendar
Color:
Sharing Information
Published: Click here to publish
Lunch (Confer
Leave for Airport (Taxi Stand)
Contacts
Organize
Views
New Contact
Name
E-mail Address
Business ph...
Classic Experts
Marcus
marcusmax@hotpop.com
Thomas More
Venus D Milo
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Desktop
AppData
Contacts
5 items
Inbox - Windows Mail
File
Edit
View
Tools
Message
Help
Create Mail
Reply
Reply All
Show All Messages
Local Folders
Inbox
Outbox
Sent Items
Deleted Items
Drafts
Junk E-mail
Imported Folder
Microsoft Communities
From
Subject
Mark Soper
Test email
Microsoft Windows M...
Welcome t
From: To:
Subject:
There is no message selected.
2 message(s), 0 unread
Working Online

At first glance, Windows Mail looks suspiciously like Outlook Express, Microsoft's much-maligned email client from Windows 98, Windows 2000, and Windows XP. Looks aren't everything, though. Under the hood, Windows Mail has a lot more going for it than its predecessor:

- More reliable storage of email messages
- Integrated and customizable junk mail filtering
- Protection against phishing
- Support for Microsoft Communities newsgroups and blogs
- Integration with the new Windows Contacts and Windows Calendar programs

NOTE

Windows Mail does not support Hotmail web-based email, unlike Outlook Express. If you want to use Windows Mail with Hotmail, use an email forwarding program that supports Hotmail to forward Hotmail messages to a POP or IMAP email account.

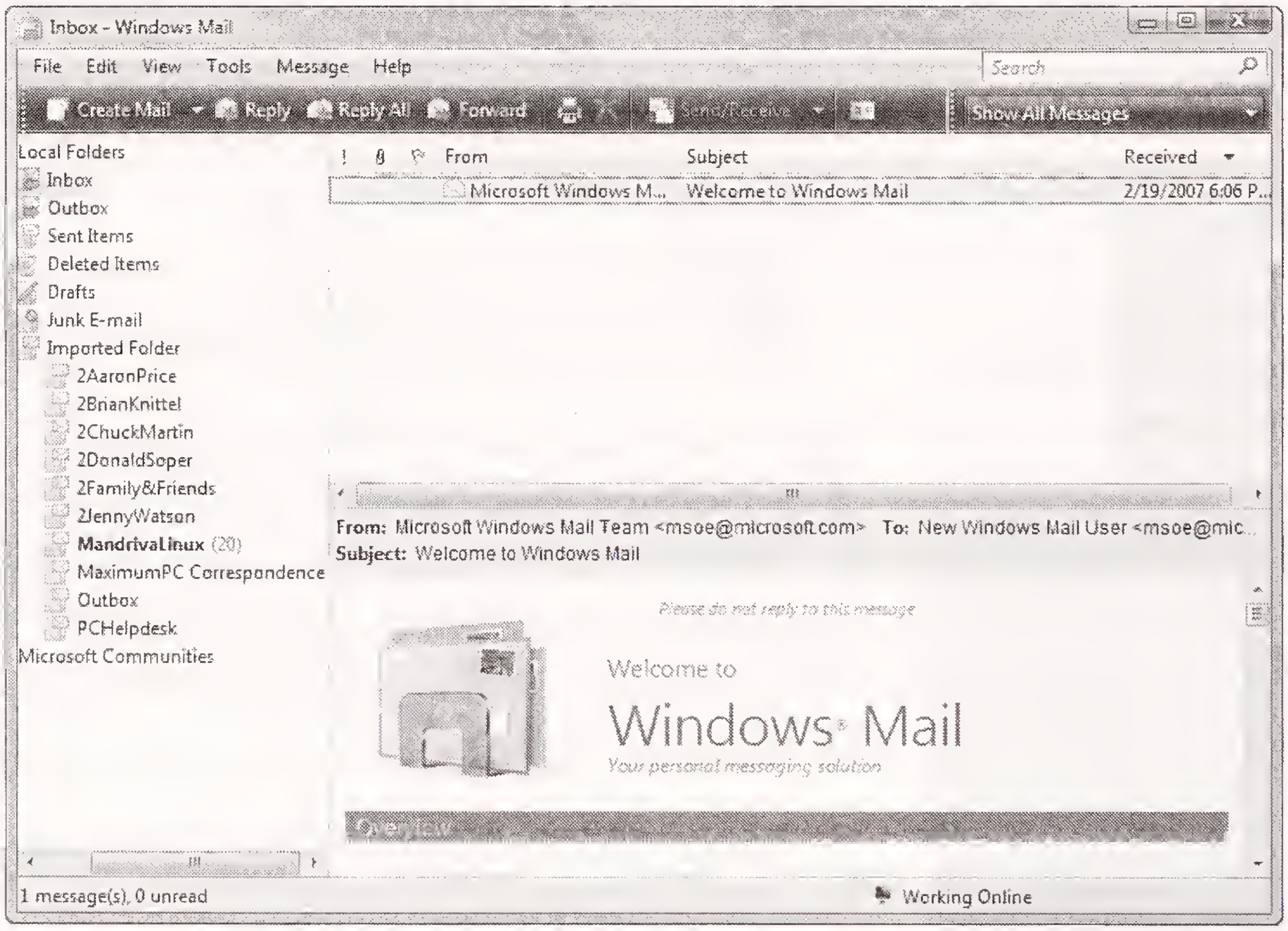
Using Windows Mail

Windows Mail (see Figure 7.1) uses a Setup Wizard similar to the Outlook Express wizard, and the configuration options for an email account are the same as those used by Outlook Express. You can also import settings and messages from Outlook Express in Windows XP with Easy Windows Transfer to set up your system.

Moving from Outlook Express to Windows Mail

If you used Windows Easy Transfer to transfer all files and settings to your Windows Vista system, this information is imported automatically into Windows Mail when you start it for the first time. Depending on the number of messages imported, it could take a while before you can use Windows Mail.

You can also import messages and contacts from Outlook Express 6, Outlook, Microsoft Exchange, or another system running Windows Mail through the Import tool (File, Import). You can import from an OE6 Identity (if present) or from an OE6 store directory. If Import can't find the folder, use Browse to locate it.


Inbox - Windows Mail
File
Edit
View
Tools
Message
Help
Search
Create Mail
Reply
Reply All
Forward
Send/Receive
Show All Messages
Local Folders
Inbox
Outbox
Sent Items
Deleted Items
Drafts
Junk E-mail
Imported Folder
2AaronPrice
2BrianKnittel
2ChuckMartin
2DonaldSoper
2Family&Friends
2JennyWatson
MandrivaLinux (20)
MaximumPC Correspondence
Outbox
PCHelpdesk
Microsoft Communities
Overview
Working Online

!	🖇	⚐	From	Subject	Received
			Microsoft Windows M...	Welcome to Windows Mail	2/19/2007 6:06 P...

From: Microsoft Windows Mail Team <msoe@microsoft.com> **To:** New Windows Mail User <msoe@mic...

Subject: Welcome to Windows Mail

Please do not reply to this message

Welcome to

Windows® Mail

Your personal messaging solution

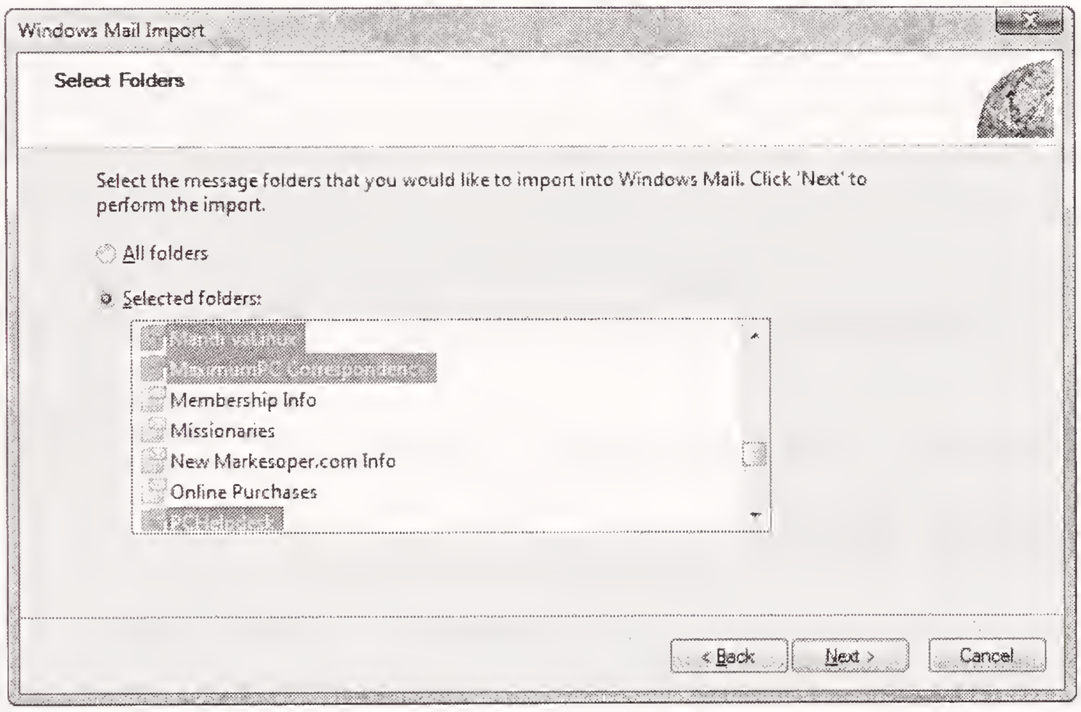
1 message(s), 0 unread

Figure 7.1

Windows Mail.

By default, all folders are imported. However, if you don't need some folders, click Selected Folders and use Ctrl+click or Shift+click to select the folders to import (see Figure 7.2). Click Finish, and the messages are stored in folders inside the Imported Folder folder (refer to Figure 7.1).

During the import process, Windows Mail converts each of the Outlook Express database (.dbx) files (displayed as folders in Outlook Express) into a folder that contains individual messages (.eml files). Even if Windows Mail had no other new features, the abandonment of the often-corrupted and space-hogging DBX file structure would be enough to make me give a cheer for Windows Mail.



Select Folders

Select the message folders that you would like to import into Windows Mail. Click 'Next' to perform the import.

○ All folders

● Selected folders:

- Mandrivalinux
- MaximumPC Correspondence
- Membership Info
- Missionaries
- New Markesoper.com Info
- Online Purchases
- PCHelpdesk

Figure 7.2

Importing Outlook Express email folders into Windows Mail.

NOTE

If you used Windows Easy Transfer to transfer your OE6 store directory (rather than all files), and your Windows XP and Windows Vista usernames are different, Windows Easy Transfer creates a new folder in the Users folder for the "new" user and stores the OE6 store directory under that folder.

NOTE

Each user's message store is located, by default, in C:\Users\Username\AppData\Local\Microsoft\Windows Mail. Note that the AppData folder is hidden by default.

Stopping Junk Email

Windows Mail includes an adjustable junk email filter that offers options for filtering emails by content or by sender name. By default, the junk email filter is set to send obvious junk email to the Junk E-mail folder in Windows Mail. To adjust how junk email is treated, click Tools, Junk E-mail Options to open the Options tab of the Junk E-mail Options dialog.

The Options tab is used to adjust how aggressive Windows Mail is at handling suspected junk email. Settings for automatic filtering range from No automatic filtering to High, or you can choose to receive email only from users on your Safe Senders List. Click the Permanently Delete check box to discard suspected junk email.

The Safe Senders tab is used to set up a list of safe email addresses or domains. By default, addresses on your list of Windows Contacts are automatically added to the Safe Senders list.

If emails from specific senders keep sneaking past Windows Mail's filters, use the Blocked Senders tab to set up a "naughty list" of addresses or domain names. Matching messages are sent to the Junk E-mail folder.

Use the International tab to intercept messages in language encodings you can't read or to intercept messages by their top-level (country) domains. Matching messages are sent to the Junk E-mail folder.

To adjust antiphishing settings, open the Phishing tab. By default, Windows Mail is designed to protect you from suspected phishing links. However, you can also configure Windows Mail to automatically move suspected phishing emails to the Junk E-mail folder using the Phishing tab, or, if you're feeling brave (or if you prefer a third-party solution), disable all antiphishing features.

TIP

You can also add people you email to your Safe Senders list by clicking the check box. However, don't enable this option if you send emails to opt-out of junk mailings: You'll just get even more junk email!

TIP

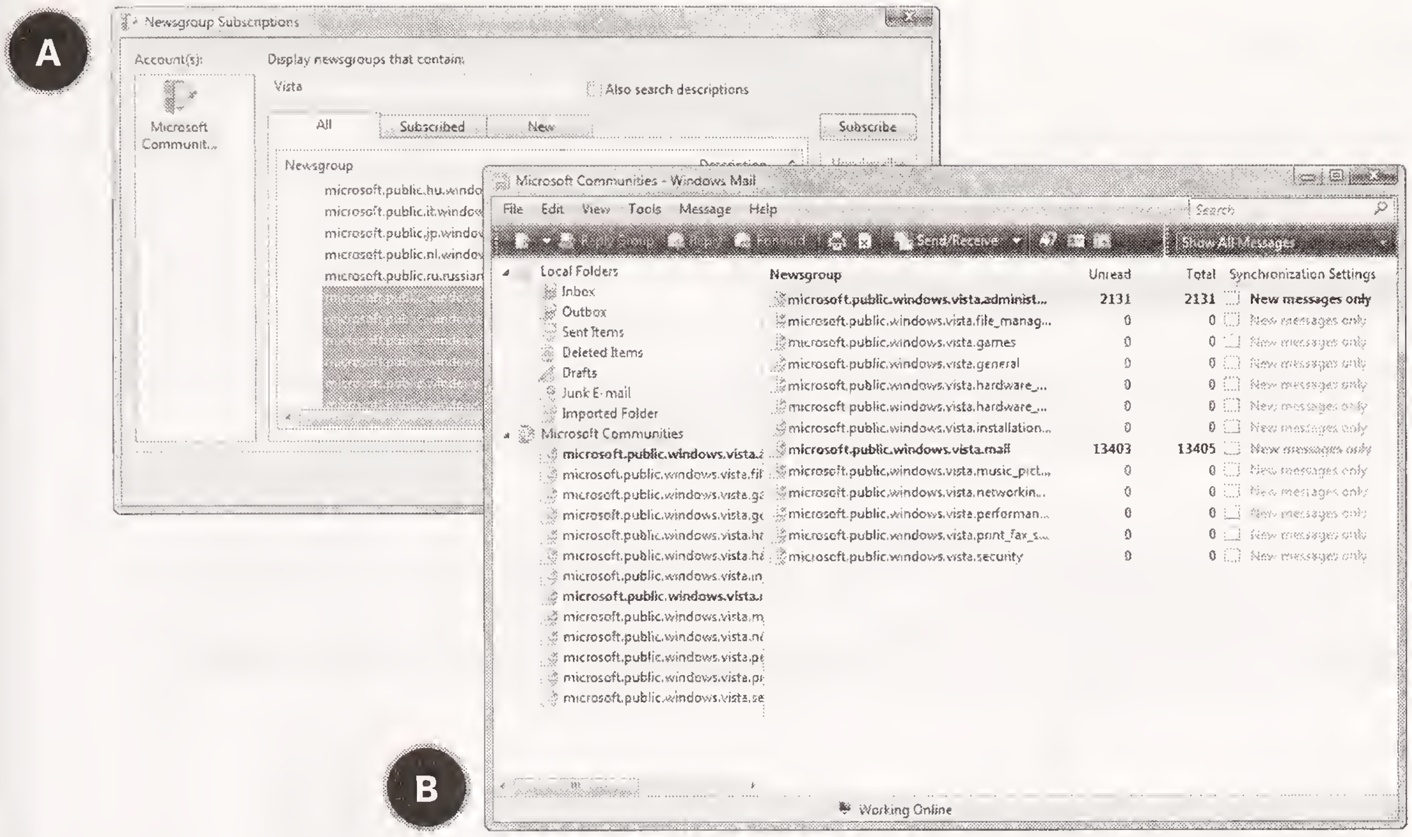
To quickly classify a sender, domain, or message as junk or A-OK, use the Message menu. Select a message, click Message, Junk E-mail, and you can specify whether to add the sender or domain to the Safe or Blocked Senders list, block or unblock a message, or mark a message as junk or not junk.

You can also create a new message rule from a selected message, just as in Outlook Express.

Accessing Microsoft Communities with Windows Mail

You can use Windows Mail to subscribe to Microsoft Communities, a new way to access Microsoft newsgroups and technology blogs. Microsoft Communities newsgroups and blogs support message ratings and rankings. To enable Microsoft Communities support or to just access Microsoft newsgroups, open the Microsoft Communities icon in the left pane of Windows Mail.

If you select the Communities option, you can select newsgroups by name or by searching for newsgroups with a specified name or content. After selecting the newsgroups you want to subscribe to (see Figure 7.3), click Subscribe and then click OK. The newsgroups you've subscribed to are listed under the Microsoft Communities icon in the Navigation pane.


A
Newsgroup Subscriptions
Account(s):
Microsoft Communit...
Display newsgroups that contain:
Vista
Also search descriptions
All
Subscribed
New
Subscribe
Newsgroup
microsoft.public.hu.windo
microsoft.public.it.window
microsoft.public.jp.window
microsoft.public.nl.windov
microsoft.public.ru.russian
B
Microsoft Communities - Windows Mail
File Edit View Tools Message Help
Search
Send/Receive
Show All Messages
Local Folders
Inbox
Outbox
Sent Items
Deleted Items
Drafts
Junk E-mail
Imported Folder
Microsoft Communities
Working Online

Newsgroup	Unread	Total	Synchronization Settings
microsoft.public.windows.vista.administ...	2131	2131	☐ New messages only
microsoft.public.windows.vista.file_manag...	0	0	☐ New messages only
microsoft.public.windows.vista.games	0	0	☐ New messages only
microsoft.public.windows.vista.general	0	0	☐ New messages only
microsoft.public.windows.vista.hardware_...	0	0	☐ New messages only
microsoft.public.windows.vista.hardware_...	0	0	☐ New messages only
microsoft.public.windows.vista.installation...	0	0	☐ New messages only
microsoft.public.windows.vista.mail	13403	13405	☐ New messages only
microsoft.public.windows.vista.music_pict...	0	0	☐ New messages only
microsoft.public.windows.vista.networkin...	0	0	☐ New messages only
microsoft.public.windows.vista.performan...	0	0	☐ New messages only
microsoft.public.windows.vista.print_fax_s...	0	0	☐ New messages only
microsoft.public.windows.vista.security	0	0	☐ New messages only

A Subscribing to newsgroups using Microsoft Communities.

B Viewing newsgroups.

Figure 7.3

Working with Microsoft Communities.

TIP

Microsoft Communities offers newsgroups in many languages, so be sure to subscribe only to newsgroups in languages you understand.

NOTE

To add an email sender to your contacts list, select an email from that sender, open the Tools menu, and select Add Sender to Contacts.

Integration with Windows Contacts and Calendar

Instead of maintaining its own separate list of contacts, Windows Mail uses the new Windows Contacts feature in Windows Vista to store and maintain contact information. To send email to a contact, open the Tools menu and select Windows Contacts. After Windows Contacts starts, select the contact, click Action, and click Send E-Mail.

Windows Mail can also start Windows Calendar from the Tools menu. You can email your calendar to other users with Windows Mail.

Windows Mail combines a familiar user interface with genuine improvements in usability and security.

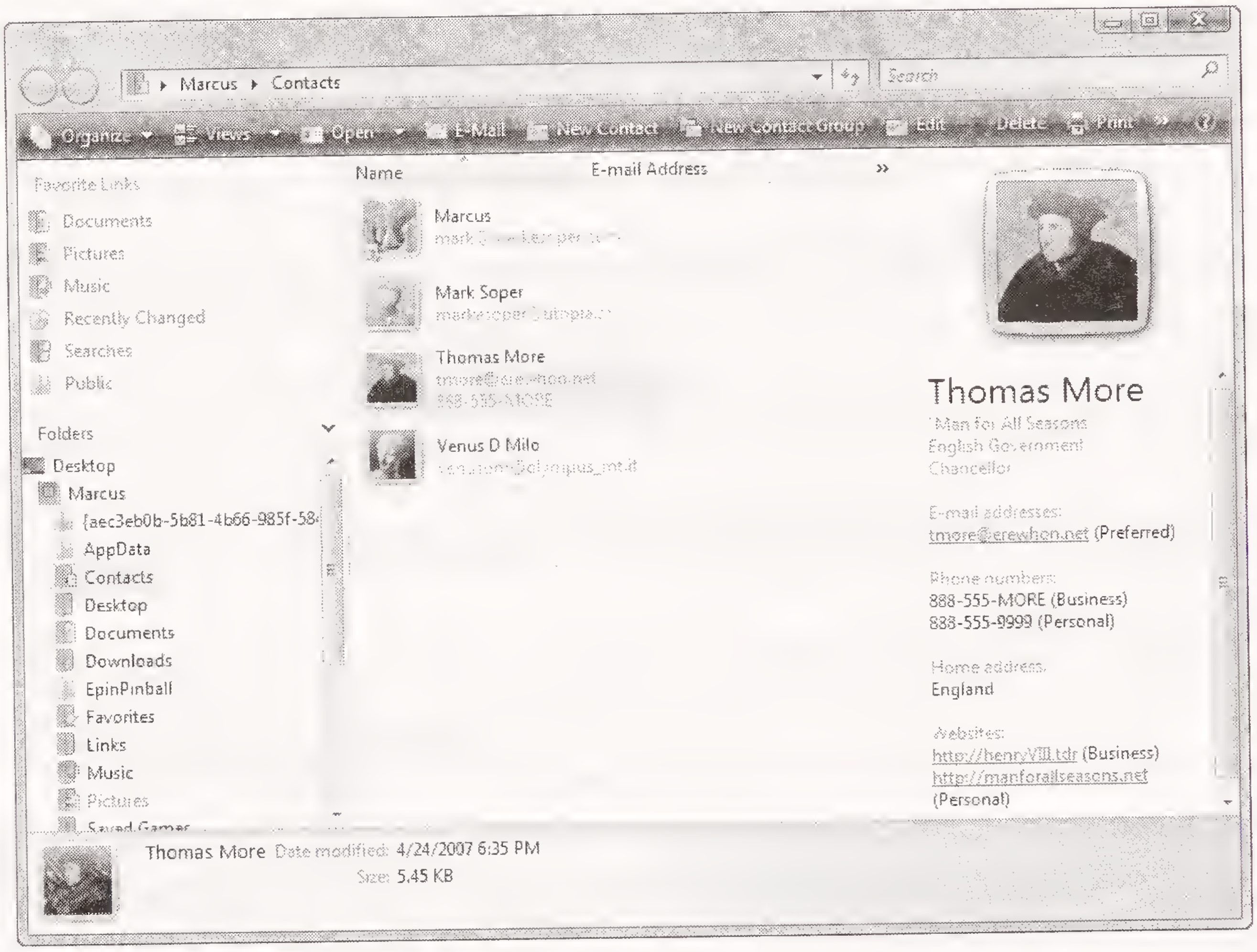
Feature Rating: ***Windows Mail***

Using Windows Contacts

Windows Contacts provides Vista users with a contact manager designed to share information among different programs, including

- Windows Mail
- Windows Meeting Space
- Windows Calendar

Windows Contacts uses a special explorer window to manage contacts, which are stored in the current user's Contacts folder. The default Tiles view lists contacts and their email addresses (see Figure 7.4).


Marcus ▸ Contacts
Search
Organize
Views
Open
E-Mail
New Contact
New Contact Group
Edit
Delete
Print
Name
E-mail Address
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Desktop
Marcus
{aec3eb0b-5b81-4b66-985f-58
AppData
Contacts
Desktop
Documents
Downloads
EpinPinball
Favorites
Links
Music
Pictures
Saved Games

Marcus

Mark Soper

Thomas More

Venus D Milo

Thomas More
Man for All Seasons
English Government
Chancellor

E-mail addresses:
tmore@erewhon.net (Preferred)

Phone numbers:
888-555-MORE (Business)
888-555-9999 (Personal)

Home address:
England

Websites:
http://henryVIII.tdr (Business)
http://manforallseasons.net (Personal)

Thomas More Date modified: 4/24/2007 6:35 PM
Size: 5.45 KB

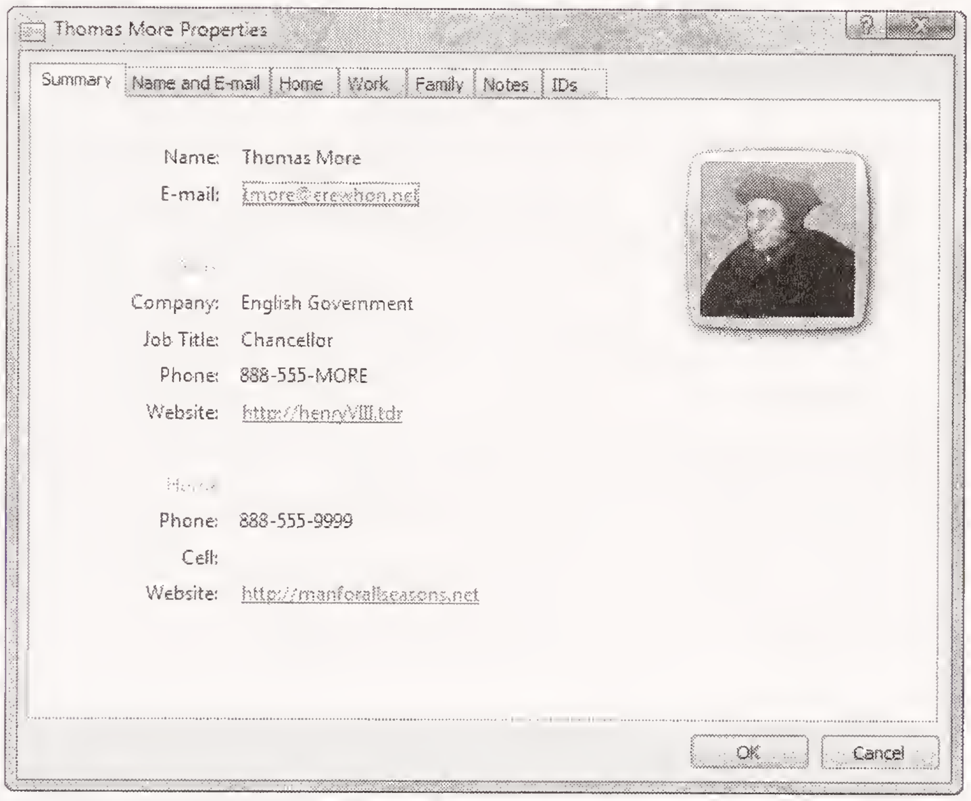
Figure 7.4

Windows Contacts.

Because Windows Contacts is a separate program and supports export to the widely supported comma-separated value (CSV) and vCard (VCF) formats, you can use Windows Contacts to manage contacts in Windows Vista, no matter what email or other contact-driven applications you use.

Creating and Importing Contacts

As you saw earlier in this chapter, you can create a contact from an incoming email. To create a contact using Windows Contact, click New Contact from the Windows Contact menu to open a multitabbed Properties dialog. Use the Notes tab to record information that doesn't fit into other tabs, and use the IDs tab to store digital signatures used for encrypting or decrypting email. After you complete the information requested, a Summary tab with highlights from the Properties dialog appears when you open the contact (see Figure 7.5), and the summary information also appears in the Preview pane (refer to Figure 7.4).



Name: Thomas More
E-mail: tmore@erewhon.net

Company: English Government
Job Title: Chancellor
Phone: 888-555-MORE
Website: http://henryVIII.tdr

Home
Phone: 888-555-9999
Cell:
Website: http://manforallseasons.net

Figure 7.5

The summary page for a contact created with Windows Contacts.

You can also import contacts from various sources, including

- Comma-separated value (CSV) files, which can be created by many applications
- LDAP interchange format (LDIF) files
- vCARD (VCF) files
- Windows Address Book (WAB) files from Outlook Express

Use the Import button to start the import process. During the import process, you can remap import fields to different fields in your contacts list, and you are also warned if an imported contact would replace an existing contact.

TIP

To change the picture shown for a contact, double-click the contact to open the contact's properties sheet. Click the down-arrow icon below the picture window on the Name and E-mail tab, select Change picture, and select a picture file from any local or network folder.

Setting Up Trusted Contacts

A *trusted contact* is a contact whose contact file (.contact) you have received via email or by copying and pasting the information into your Contacts folder from a removable-media drive or network folder. Setting up trusted contacts is important if you want to use Windows Meeting Space and you want to screen out invitations from unknown users.

Your own contact information is always listed as a trusted contact in your Contacts folder. To share your contact information with another user so that user will recognize you as a trusted contact, you can email your contact file to that user as an attachment (not as a VCard), or copy your contact information to a USB flash drive, a network folder, or a CD.

When you receive a contact file from another user via email, save the contact file to your Contacts folder. If you are accessing the contact file from removable media or a network folder, drag or copy the contact file to your Contacts folder. After you receive contact information from everyone you want to work with via Windows Meeting Space, you can specify that you will accept invitations only from trusted contacts.

Creating a Contact Group

If some of your contacts are related in some way (same department, family members, members of a club or organization, for example), you can add them to a contact group (also known as a mailing list) for quick group emails. Click the New Contact Group button to open the Contact Group Properties dialog.

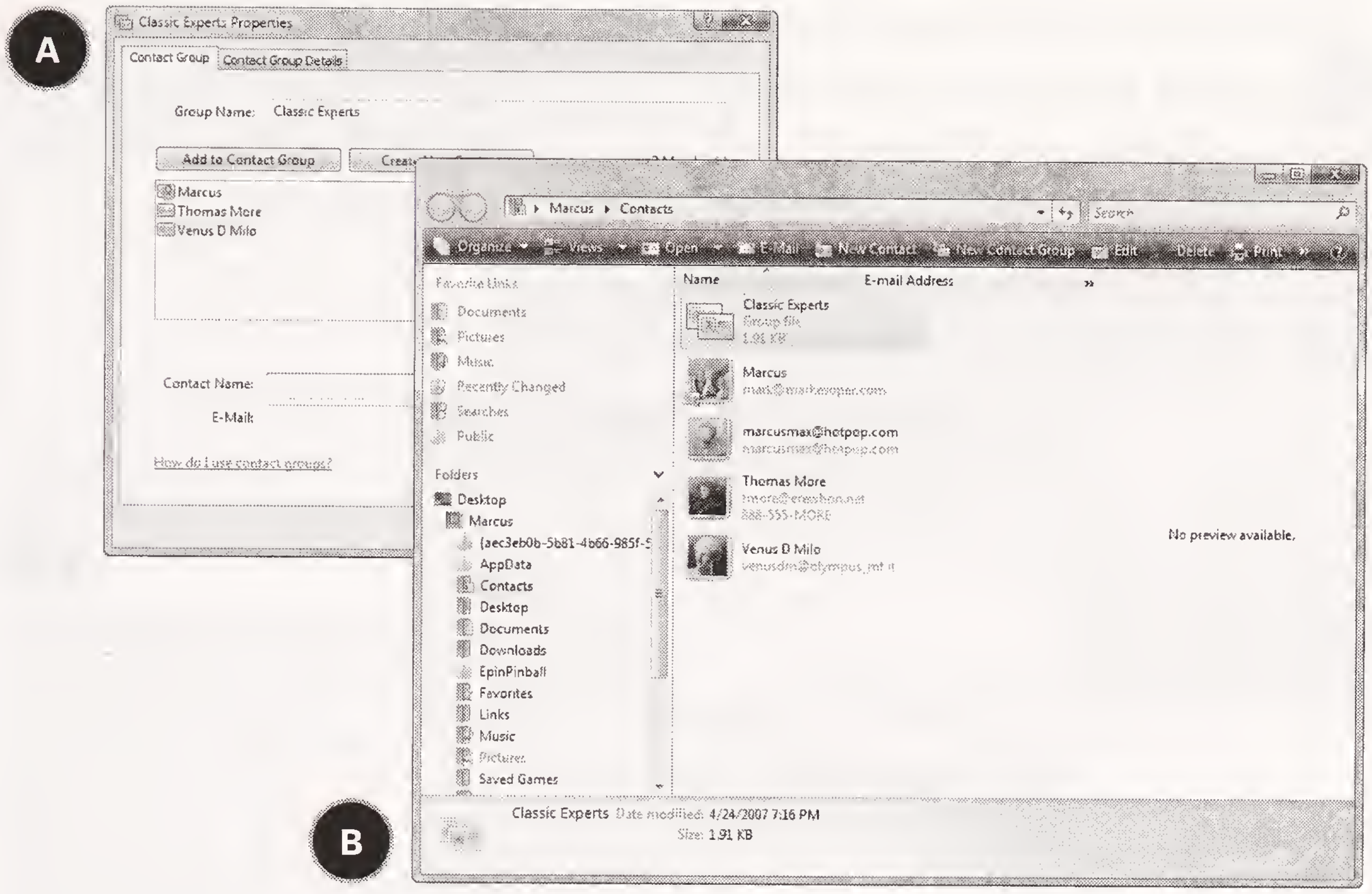
Enter the name of the group, click Add to Contact Group, and select the contacts you want to add to the group. You can also click Create New Contact to add a contact on the fly. Use the Contact Group Details tab to specify the location or website of the group. Figure 7.6 provides two views of a contact group: after creation, and as it is listed in the contact listing. When you send an email to the contact group, all members show up in the To: field.

NOTE

Don't use contact groups for anonymous email lists. Use them only when all members of the group are known to each other.

Windows Contacts provides centralized control of contact information and the flexibility needed to make it really useful.

Feature Rating: ***Windows Contacts***


A
Classic Experts Properties
Contact Group
Contact Group Details
Add to Contact Group
Create
How do I use contact groups?
B
Marcus ▸ Contacts
Search
Organize
Views
Open
E-Mail
New Contact
New Contact Group
Edit
Delete
Print
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Desktop
Marcus
{aec3eb0b-5b81-4b66-985f-5
AppData
Contacts
Desktop
Documents
Downloads
EpinPinball
Favorites
Links
Music
Pictures
Saved Games
Name
E-mail Address
No preview available.

Group Name: Classic Experts

Marcus
Thomas More
Venus D Milo

Contact Name:

E-Mail:

Classic Experts

Group file

1.91 KB

Marcus

marcusmax@hotpop.com

Thomas More

888-555-MORE

Venus D Milo

Classic Experts Date modified: 4/24/2007 7:16 PM

Size: 1.91 KB

A Creating a new contact group.

B Viewing contacts and a contract group.

Figure 7.6

Working with contact groups.

Using Windows Meeting Space

Windows Meeting Space (available in Home Premium, Business, and Ultimate editions only) enables you to set up an online meeting (complete with shared desktops, documents, and programs) with up to ten concurrent users over a wired or wireless network.

When you start Windows Meeting Space for the first time, a setup dialog asks for permission to set up Distributed File System Replication, Peer to Peer Collaborative Foundation, Network Projection, and People Near Me, and to configure Windows Firewall to permit network access by these programs.

NOTE

Windows Meeting Space can also be used in ad-hoc mode, which is useful when meeting with users who do not have access to a corporate network.

The People Near Me dialog appears next, prompting you for a screen name, whether to start People Near Me automatically on startup, and to select whether you'll accept invitations from Anyone (default), Trusted Contacts only, or No One. After completing these first-time configuration settings, Windows Meeting Space opens.

Starting a Meeting

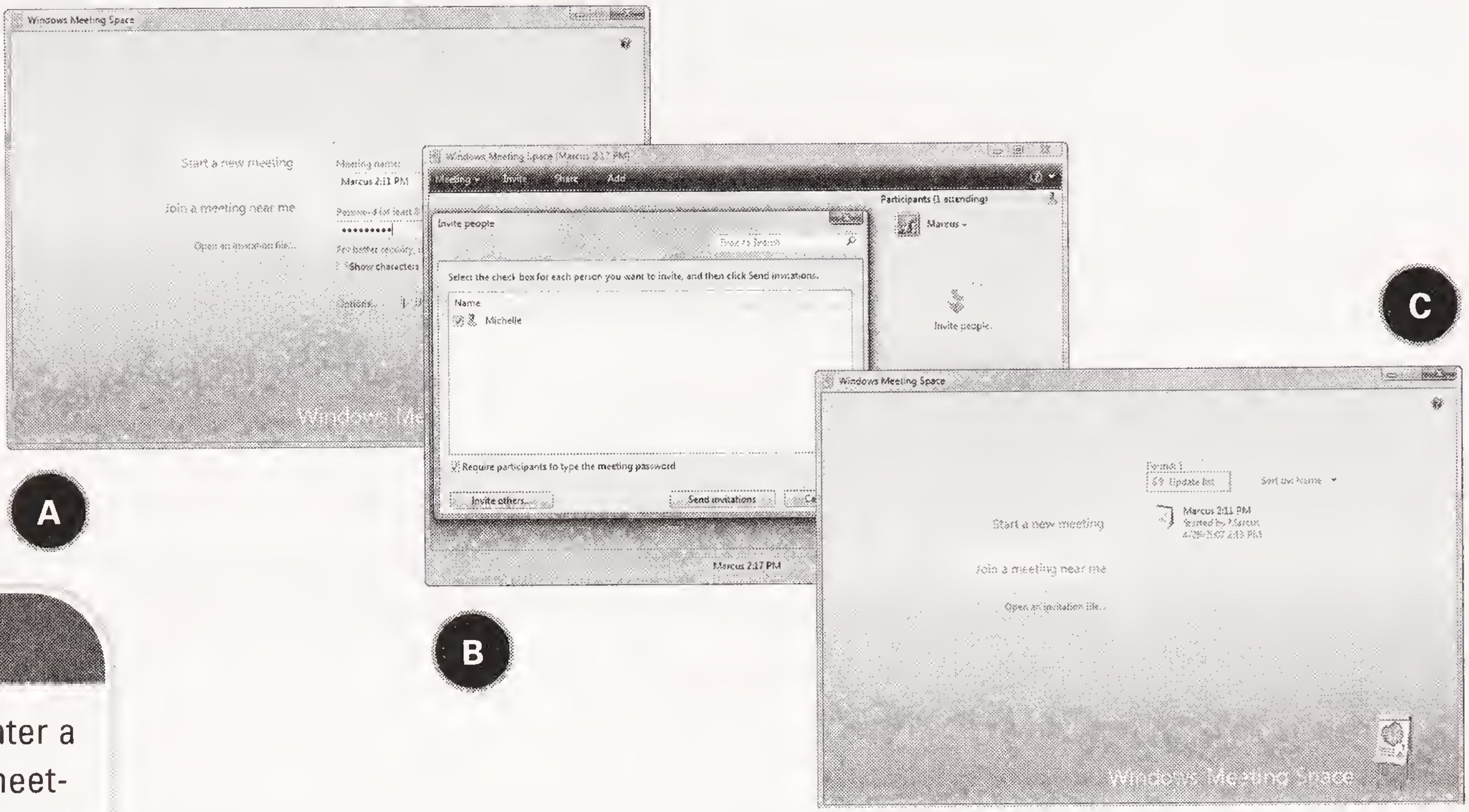
Click Start a New Meeting to set up a meeting. Enter the name (your name and time are used as defaults) and a password, and click the green arrow to start the meeting (see Figure 7.7 A). Use the Invite People dialog (see

Figure 7.7 B) to invite other users. If other users are running Windows Meeting Place at the same time, the meeting will appear in the Join a Meeting Near Me dialog (see Figure 7.7 C).

A Starting a meeting.

B Inviting a user to join the meeting.

C Preparing to join a meeting.


Windows Meeting Space
Start a new meeting
Join a meeting near me
Open an invitation file...
Meeting name:
Marcus 2:11 PM
Show characters
Options...
A
Windows Meeting Space (Marcus 2:17 PM)
Meeting
Invite
Share
Add
Participants (1 attending)
Marcus
Invite people
Invite people
Type to Search
Name
Michelle
Invite others...
Send invitations
Marcus 2:17 PM
B
C
Windows Meeting Space
Update list
Sort by: Name
Start a new meeting
Join a meeting near me
Open an invitation file...
Marcus 2:11 PM
Windows Meeting Space

Select the check box for each person you want to invite, and then click Send invitations.

☑ Require participants to type the meeting password

Figure 7.7

Working with Windows Meeting Space.

If invitees are not running Windows Meeting Place, the invitation pops up over the notification area for a few moments before moving to the taskbar. An invitee can click View to see the invitation, click Decline to turn it down, or click Dismiss to do nothing. If you are receiving an invitation from an unknown user, the invitation appears similar to the one in Figure 7.8 A. An invitation from someone on your Trusted Contacts list appears similar to the one in Figure 7.8 B. If a password is required, enter it to join the meeting.

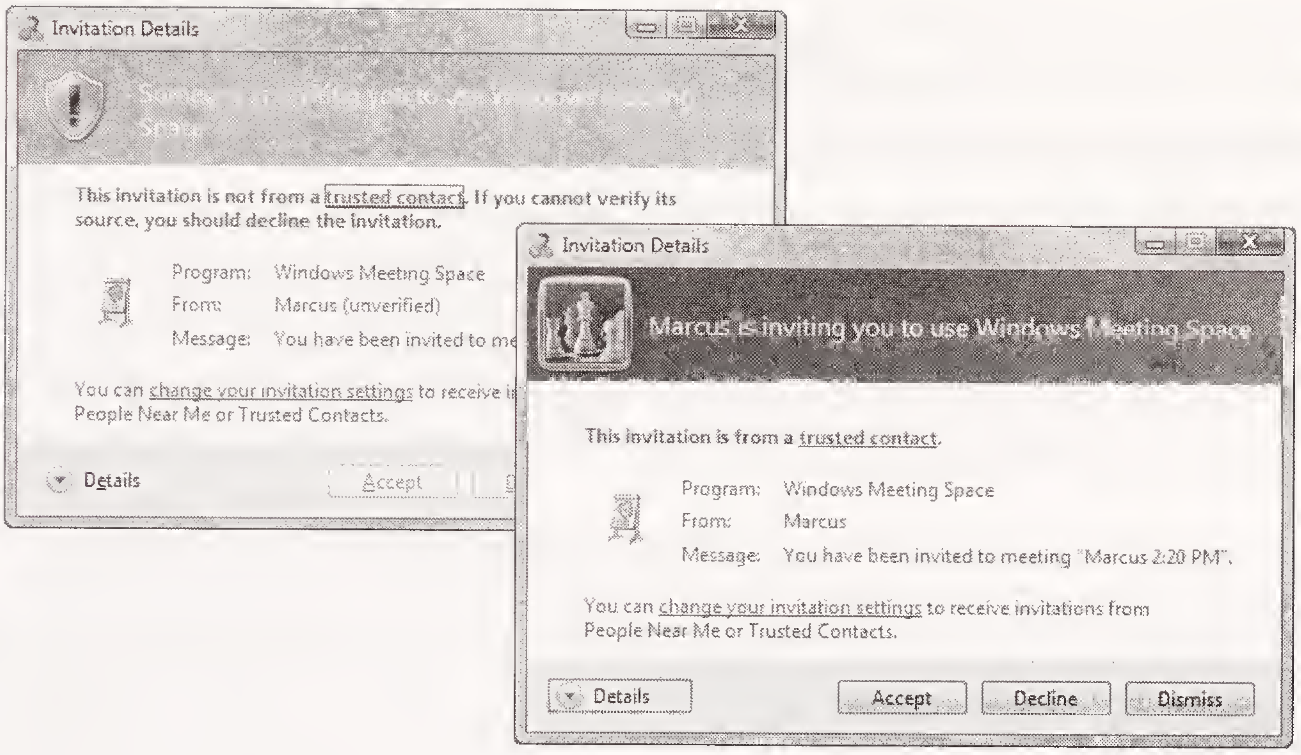
Sharing a Program or the Desktop

During a meeting, any participant can share a program or share the desktop. However, only one user can share a program or the desktop at a time. Click the projector screen icon to share a program or the desktop. Select from running programs, browse for a program or file, or select your desktop. The shared program runs as it normally does on the sharer's desktop but features a control bar across the top of the screen (see Figure 7.9 A) and runs in a window on other participants' systems (see Figure 7.9 B).

NOTE

Although you *must* enter a password to start a meeting, it's not a requirement that participants use a password. If you don't want to require attendees to use a password to join your meeting, clear the Require Participants to Type the Meeting Password check box.

If you use the default option to require users to provide a password to join a meeting, you must provide the password separately. You may use a telephone message, IM the user, or send an email with the password. You can also invite users to a meeting through an email message. Use this method to invite users to a meeting if you suspect they might not be using their computers when you send the invitation.


Invitation Details
Details
Accept
Invitation Details
Details
Accept
Decline
Dismiss

This invitation is not from a trusted contact. If you cannot verify its source, you should decline the invitation.

Program: Windows Meeting Space
From: Marcus (unverified)
Message: You have been invited to me

You can change your invitation settings to receive i
People Near Me or Trusted Contacts.

Marcus is inviting you to use Windows Meeting Space

This invitation is from a trusted contact.

Program: Windows Meeting Space
From: Marcus
Message: You have been invited to meeting "Marcus 2:20 PM".

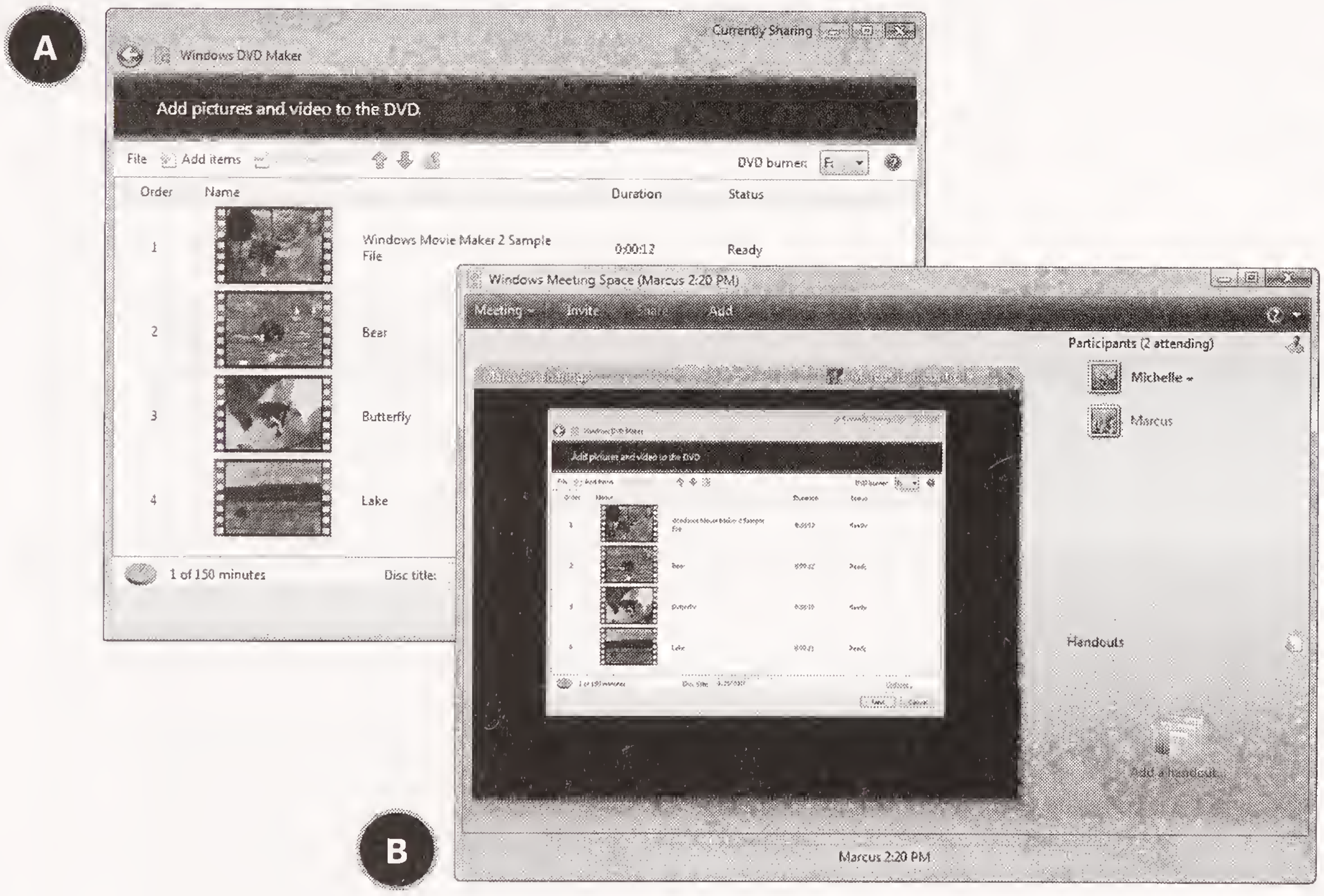
You can change your invitation settings to receive invitations from People Near Me or Trusted Contacts.

A An invitation from a user not on your Trusted Contacts list.

B An invitation from a trusted contact.

Figure 7.8

Receiving an invitation to a meeting.


A
Currently Sharing
Windows DVD Maker
File
Add items
DVD burner:
F:
1 of 150 minutes
Disc title:
Windows Meeting Space (Marcus 2:20 PM)
Meeting
Invite
Share
Add
Participants (2 attending)
Michelle
Marcus
Handouts
Add a handout
Marcus 2:20 PM
B

Add pictures and video to the DVD

Order	Name	Duration	Status
1	Windows Movie Maker 2 Sample File	0:00:12	Ready
2	Bear		
3	Butterfly		
4	Lake		

A The shared program on the originating system.

B The shared program as it appears on other systems.

Figure 7.9

Sharing a program.

When you switch between a shared program and Windows Meeting Space, users will no longer be able to see the shared program. If you need to add handouts to your meeting, do so before starting the meeting to avoid such disruptions.

NOTE

To see how your shared program appears to other participants, restore the Windows Meeting Space window and click Show Me How My Shared Session Appears.

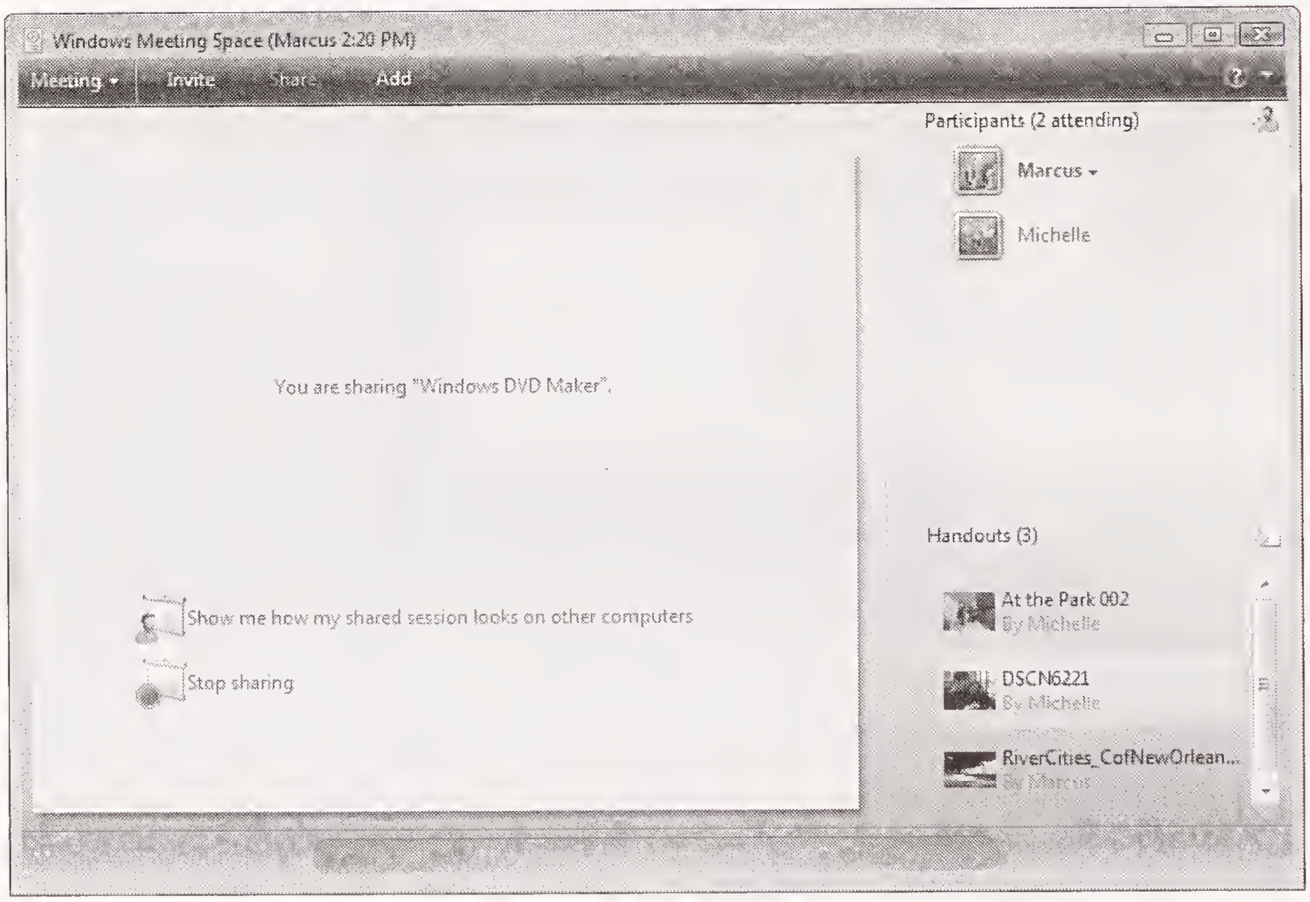
If you are running the Aero desktop on a system and start sharing the desktop or a program in Windows Meeting Space, you may see the system switch to the Vista Basic color scheme. The system will switch back to Aero when you stop sharing.

Other users can request control; the request is displayed at the top of the screen. To give control of the shared desktop or program to another user, select the user from the Give Control menu at the top of the screen (press the Windows and Esc keys to get control back).

To stop sharing a program, restore the Windows Meeting Place window and click Stop Sharing.

Using Handouts

You don't need to go anywhere near PowerPoint to use the Handouts feature in Windows Meeting Space: A handout is any file you want to distribute to other users. When you select a file or files as handouts, they appear in the lower-right corner of the Windows Meeting Space dialog (see Figure 7.10). Any member of the meeting can distribute handouts, and any member of the meeting can open a file distributed as a handout and make changes. Handouts are copied to each user's system; the original is not affected.



You are sharing "Windows DVD Maker".

Windows Meeting Space (Marcus 2:20 PM)
Meeting
Invite
Share
Add
Participants (2 attending)
Marcus
Michelle
Show me how my shared session looks on other computers
Stop sharing
Handouts (3)
At the Park 002
By Michelle
DSCN6221
By Michelle
RiverCities_CofNewOrlean...
By Marcus

Figure 7.10

Handouts provided by different users in a meeting.

Wrapping Up the Meeting

To save handouts for reference, click Meeting, and select Save Handouts. You can save handouts to any local or network folder. To leave a meeting (and retain the option to return later), click Meeting, and select Leave Meeting. To close the meeting, click Meeting, Exit. When you select Exit, you are prompted to save handouts to a new or existing folder. The meeting is over when the originator exits the meeting.

Adding Chat Capability to Windows Meeting Space

Face-to-face meetings are more than sharing information and desktops—they also involve speaking and, hopefully, listening to each member of the meeting with something (or, sometimes, nothing) to say. To add this missing dimension to a Windows Meeting Space meeting, use Windows Live Messenger. It supports text, voice, and webcam chats, and interconnects with Yahoo Messenger 8.1. Download it from http://get.live.com/messenger/.

Windows Meeting Space provides a solid base for running a technology-driven meeting among Vista users. By adding chat features, you can make it a complete meeting platform.

👍 *Feature Rating:* ***Windows Meeting Space***

Using Windows Calendar

Windows Calendar provides users of every Vista edition an easy-to-use tool for managing appointments, tasks, and reminders. Because Windows Calendars supports the popular iCal format (no points for guessing who created that format), you can publish your calendar to a variety of websites and download calendars published by others, including businesses and sports teams.

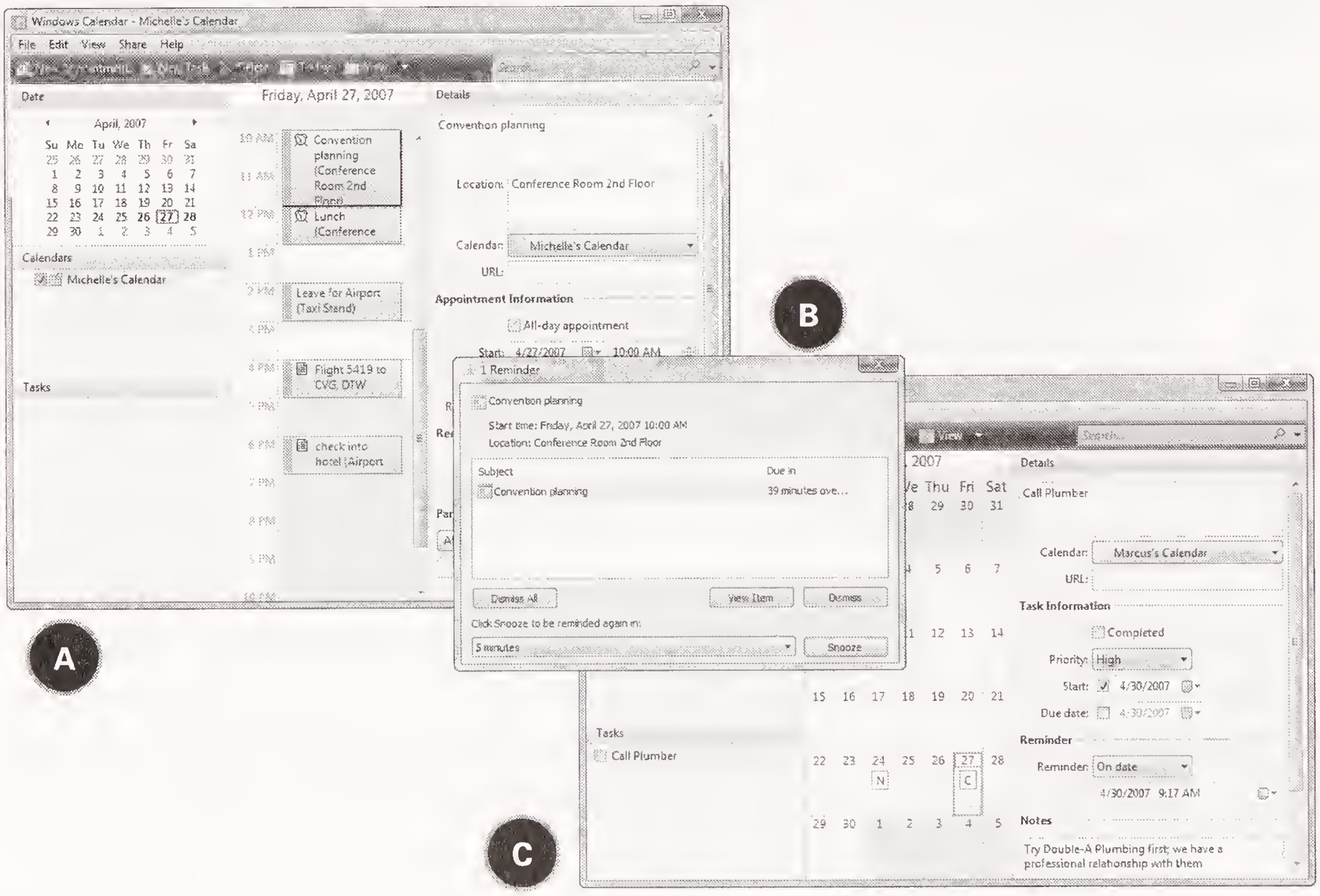
Windows Calendar opens to a view displaying the current month, current day, available calendars, and tasks. Use the right pane to select a color for the current user, to publish the calendar to a website or shared folder, or to enter the details for an appointment or task. To select different calendar views, including work week, week, or month, use the View menu.

Adding Appointments and Using Reminders

To add an appointment, select the date for the appointment and then double-click the starting time, or click New Appointment. In the Details pane, enter the name of the appointment, location, what calendar to use (if more than one is loaded), the calendar's URL (if applicable), appointment date and time (or select an all-day appointment), recurrence, reminder time, participants, and notes. To edit this information, click the appointment. Figure 7.11 A shows a calendar with a typical appointment.

When you create an appointment, you can select the option to remind participants of the forthcoming appointment. These appointments are shown with an alarm clock icon, as in Figure 7.11 A. A typical reminder is shown in Figure 7.11 B.

To set up a task, click New Task. The Details pane is used to select date, time, priority, calendar to use, and reminder. Figure 7.11 C shows a typical task and the Month view.



A Displaying an appointment in the default Day view.

B Receiving a reminder of an (overdue) appointment.

C Displaying a task in Month view.

Windows Calendar - Michelle's Calendar
File
Edit
View
Share
Help
Date
April, 2007
Su Mo Tu We Th Fr Sa
Calendars
Michelle's Calendar
Tasks
Friday, April 27, 2007
10 AM
11 AM
12 PM
Convention planning (Conference Room 2nd Floor)
Lunch (Conference
Leave for Airport (Taxi Stand)
Flight 5419 to CVG, DTW
check into hotel (Airport
Details
Appointment Information
All-day appointment
1 Reminder
Subject
Due in
Dismiss All
View Item
Dismiss
Snooze
Search...
Thu
Fri
Sat
Tasks
Task Information
Completed
Reminder
Notes
N
C
A
B
C

Convention planning

Location: Conference Room 2nd Floor

Calendar: Michelle's Calendar

URL:

☐ All-day appointment

Start: 4/27/2007 10:00 AM

Convention planning

Start time: Friday, April 27, 2007 10:00 AM

Location: Conference Room 2nd Floor

Subject	Due in
Convention planning	39 minutes ove...

Click Snooze to be reminded again in: 5 minutes

Call Plumber

Calendar: Marcus's Calendar

URL:

☐ Completed

Priority: High

Start: ☑ 4/30/2007

Due date: ☐ 4/30/2007

Reminder: On date

4/30/2007 9:17 AM

Notes

Try Double-A Plumbing first; we have a professional relationship with them

Figure 7.11

Working with Windows Calendar.

Inviting Participants

When you create an appointment, you can invite contacts and contact groups from your Windows Contact list to attend. Click Attendees to select contacts.

After selecting participants, click Invite to send participants an email with the appointment details (provided with an .ics file to add to their Windows Calendars).

TIP

If you need to invite someone who isn't on the list, click New Contact to add the person's contact information to your Contact list.

Working with Other Calendars

Windows Calendar .ics files can be used by iCal and other iCal-compatible applications. Some calendar programs can directly open an .ics file, whereas others must import from or export to the .ics file format. Check the documentation for a particular calendar program to determine whether, and how, it supports .ics files.

Publishing, Importing, and Combining Calendars

Windows Calendar goes beyond your personal calendar needs: You can publish your calendars to a shared network folder or a website so they can be added to others' systems. To publish a calendar, click on an empty space in the calendar and click the Click Here to Publish link. Enter the name of the calendar, browse or enter a location (such as a website, shared network, or local folder), and choose from any or all of the following options (all disabled by default):

- Automatically publish changes
- Include notes
- Include reminders
- Include tasks

Click Publish to publish the calendar.

To import a calendar, click File, Import, and browse to the calendar location. By default, a new calendar is created, or you can choose to import the calendar into a current calendar.

NOTE

Find calendars for your favorite TV shows, sports events, concerts, and special interests at http://www.icalshare.com, http://www.calendardata.com, and http://www.attendio.com.

TIP

You can use the Cut, Copy, and Paste commands to copy appointments from one day to another or from one calendar to another. Right-click an appointment to choose from these options.

If you import a calendar, use the Calendars section of the left pane to select which calendar to display. Figure 7.12 shows how Windows Calendar displays two calendars at the same time.

Other sharing options include Subscribe, Sync, and Email. Use the Share menu to select these options.

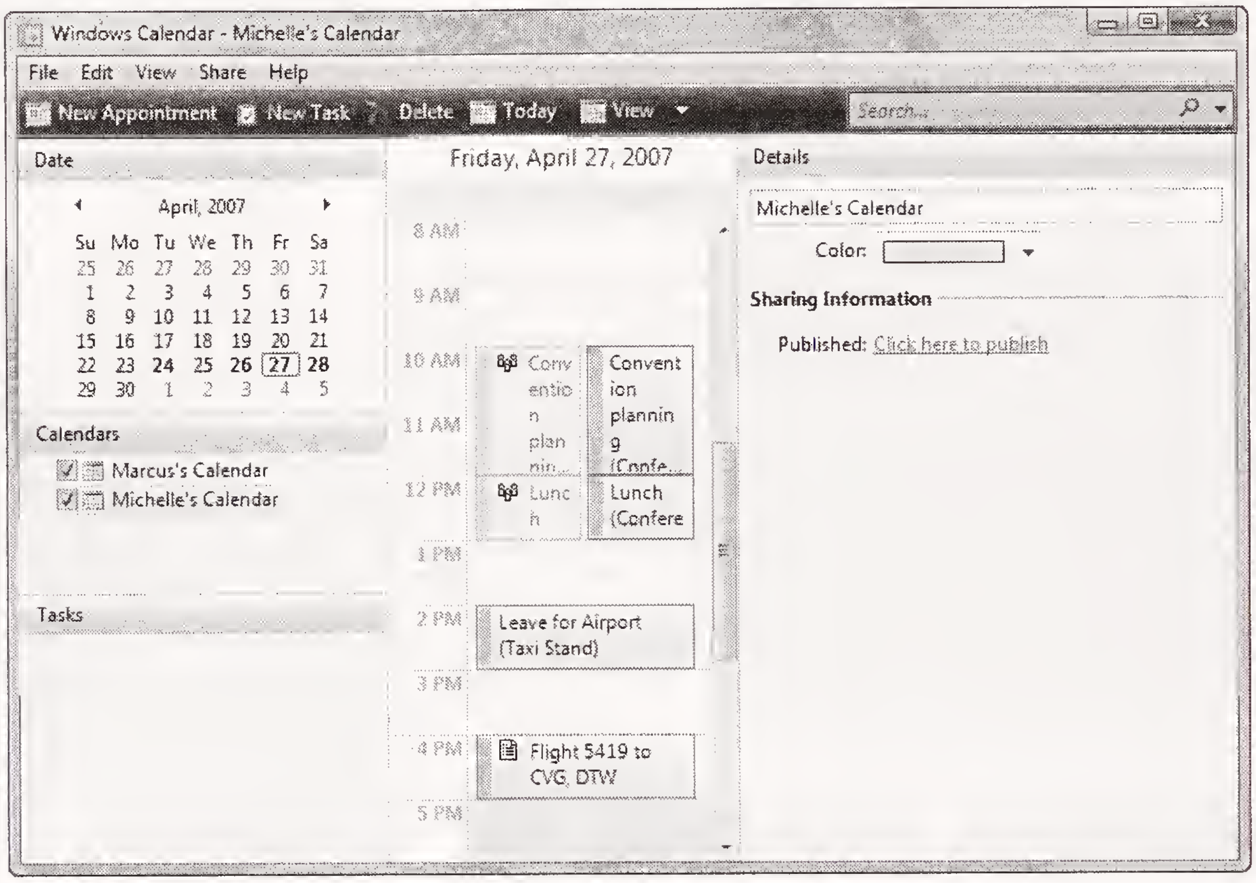

Windows Calendar - Michelle's Calendar
File Edit View Share Help
New Appointment
New Task
Delete
Today
View
Search...
Date
April, 2007
Su Mo Tu We Th Fr Sa
Calendars
Marcus's Calendar
Michelle's Calendar
Tasks
Friday, April 27, 2007
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
4 PM
5 PM
Convention planning
Convention planning (Confe...
Lunch
Lunch (Confere
Leave for Airport (Taxi Stand)
Flight 5419 to CVG, DTW
Details
Michelle's Calendar
Color:
Sharing Information
Published: Click here to publish

Figure 7.12

Displaying two calendars at the same time.

Printing Your Calendar

TIP

To identify the calendar, create an appointment at the beginning of the date or time range you are printing and use the user's name as the appointment name.

Use File, Print to print your calendar (or other selected calendars) to any installed printer. You can print day, week, work week, or month views. Unfortunately, the user's name is not printed on the calendar; by default, you must rely on the color-coding used by Windows Calendar to distinguish between calendars (and that's not much help if you use a monochrome laser to print calendars).

Windows Calendar makes creating and sharing a calendar easy. It needs better printing options, but it's otherwise a solid application for keeping families and small offices organized.

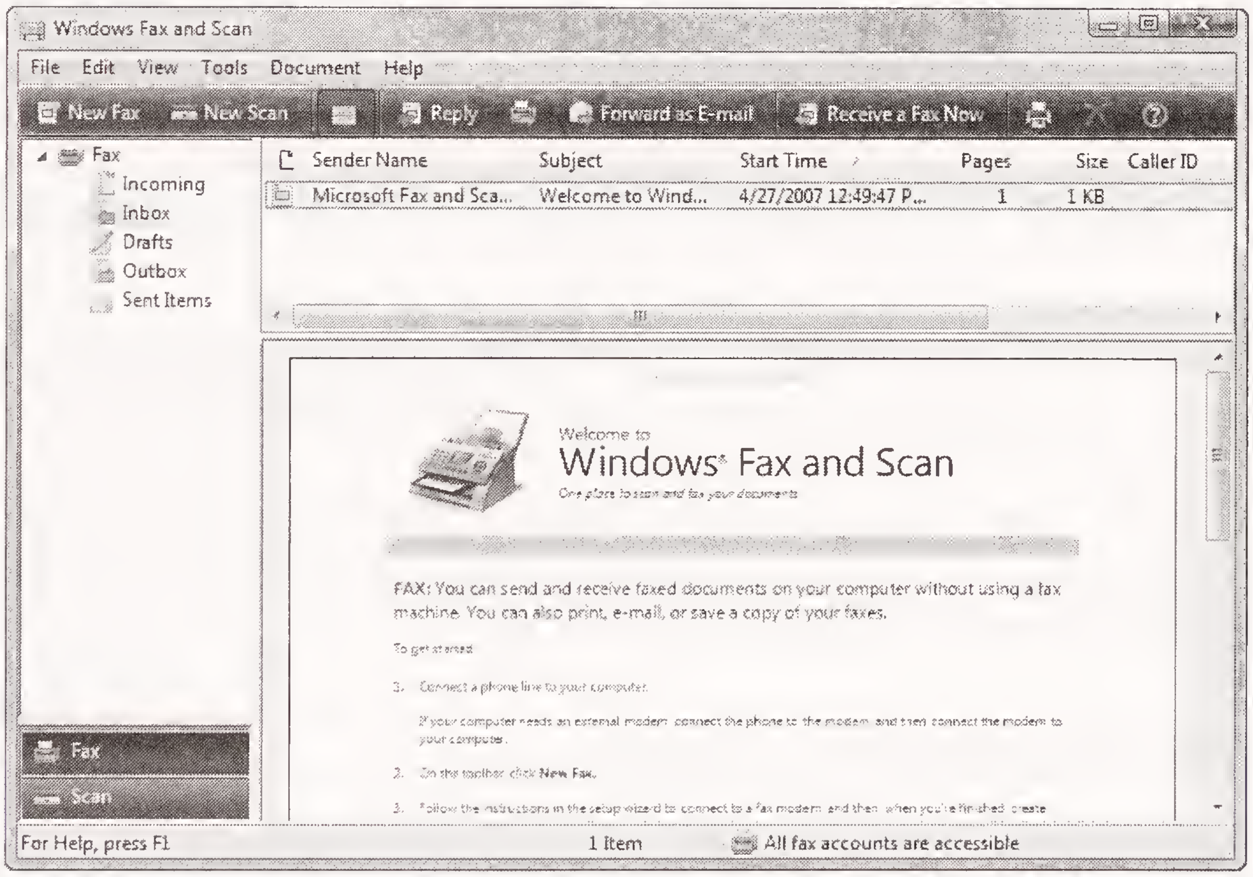
Feature Rating: ***Windows Calendar***

Using Windows Fax and Scan

Windows Fax and Scan (available in Business and Ultimate editions only) gives you a good reason to dust off your fax modem: Instead of printing documents and then running to a fax machine to send them, Windows Fax and Scan lets you send faxes directly from any application with a print feature and scan documents for faxing or for other purposes using a flatbed scanner or all-in-one device.

You can use USB or serial-based external fax modems or internal fax modems (including PCI, PC Card, and integrated models) with Windows Fax and Scan. To determine whether you have a fax modem installed in your computer, open Windows Device Manager and open the Modems category.

Figure 7.13 illustrates Windows Fax and Scan's opening menu. From this menu, you can select either Fax or Scan view by clicking the appropriate button in the lower left corner.


Windows Fax and Scan
File
Edit
View
Tools
Document
Help
New Fax
New Scan
Reply
Forward as E-mail
Receive a Fax Now
Fax
Incoming
Inbox
Drafts
Outbox
Sent Items
Fax
Scan
Welcome to
Windows® Fax and Scan
For Help, press F1
1 Item
All fax accounts are accessible

Sender Name	Subject	Start Time	Pages	Size	Caller ID
Microsoft Fax and Sca...	Welcome to Wind...	4/27/2007 12:49:47 P...	1	1 KB	

FAX: You can send and receive faxed documents on your computer without using a fax machine. You can also print, e-mail, or save a copy of your faxes.

Figure 7.13

Windows Fax and Scan's Fax view.

Configuring the Fax Service

When you start Windows Fax and Scan for the first time, you must configure a fax account. From the Fax view shown in Figure 7.13,

NOTE

Windows Fax and Scan uses Windows image acquisition (WIA) drivers for faxing. WIA support is included in scanner drivers provided with Windows Vista. However, if you need to download drivers for your scanner, make sure you download WIA-compliant drivers. Some vendors provide TWAIN drivers, which provide support for specific scanner features such as sheet feeders or transparency adapters and WIA drivers, which support basic scanner features only, as separate downloads.

NOTE

Most setup features of Windows Fax and Scan are protected by user account control (UAC). If you ask a standard user to set up the service, be prepared to jump in frequently to provide your administrator password—or set it up yourself.

click the New Fax button to open the Fax Setup dialog box. You can use the fax modem in your computer or a fax server on your network as a fax device.

NOTE

Use Answer Automatically if you have a dedicated fax line or a distinctive ring detection switch. Use Notify Me if you use a single phone line.

On the next dialog, choose from two different fax-receiving options: Answer Automatically or Notify Me (you can also delay this step until later). When prompted to unblock Windows Fax and Scan, choose Unblock if you want to send faxes originating from network clients.

Close the New Fax dialog when it appears and complete setup.

Configuring Fax and Sender Settings

To set up sender information, open Tools, Sender Information. This information is used to fill in the cover page.

Open Tools, Fax Settings to configure how the fax process works, using the following tabs:

- General—Configures your fax modem as a send-only, a receive-only, or a send and receive device, and select how to answer incoming faxes.
- Tracking—Configures how fax notifications and progress are displayed.
- Advanced—Configures location of fax archive, banner usage, redial rules, and the best time to send faxes to save money on long distance rates.
- Security—Configures user and group permissions for sending faxes (by default, everyone) and managing faxes (by default, administrators).

Open Tools, Fax Options to set up options for audio alerts for messages (General tab), email delivery receipts (Receipts tab), inclusion of original messages (Send tab), and font sizes (Compose tab).

Sending and Receiving Faxes

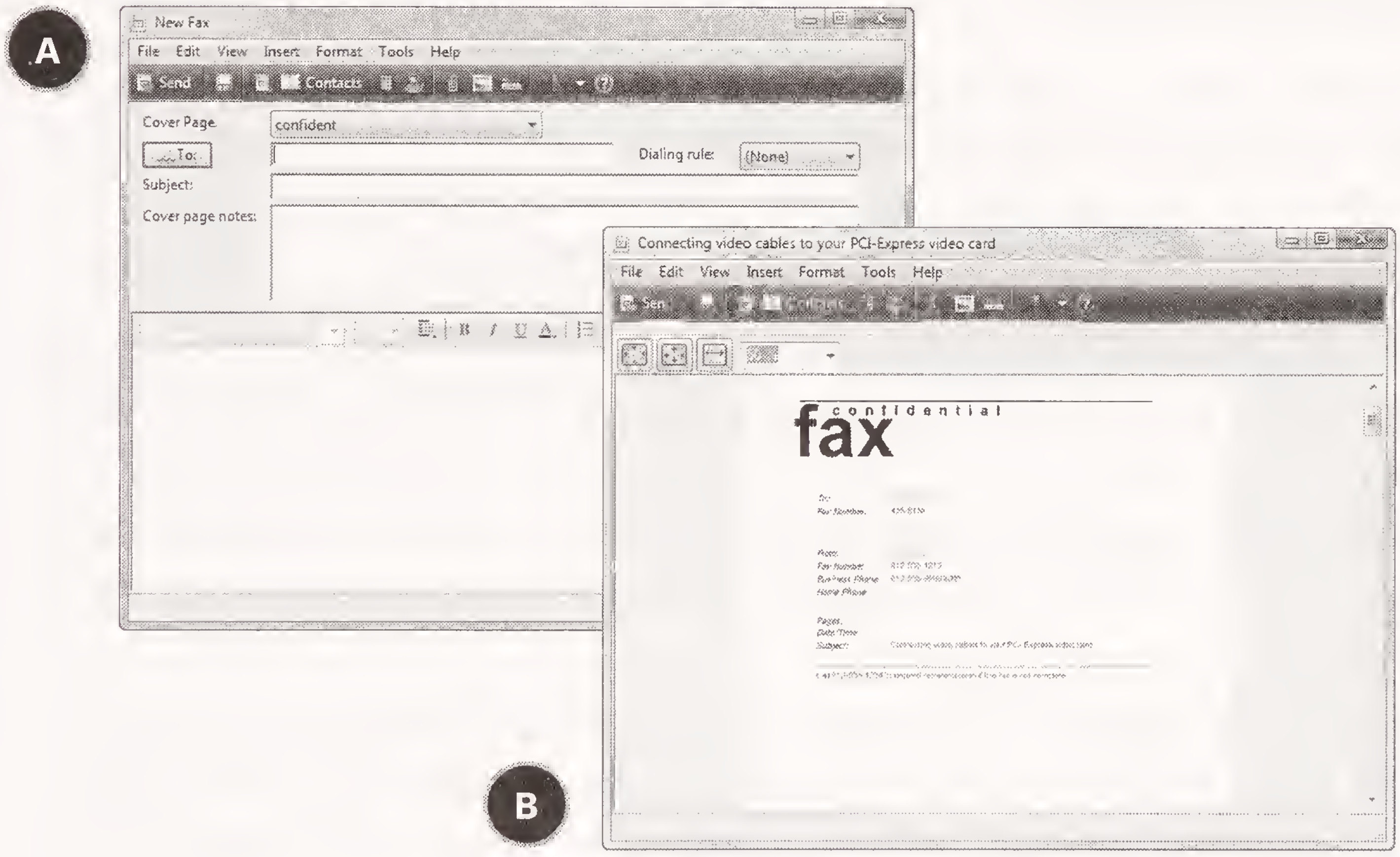
After configuring Windows Fax and Scan, you can send faxes from applications using the installed Fax print driver or from Windows Fax and Scan itself:

- Use the Fax print driver when you want to send a document already on your system.
- Use Windows Fax and Scan to send paper documents or a mixture of computer and paper documents.

To send a fax with Windows Fax and Scan, click the New Fax button to open the New Fax dialog (see Figure 7.14 A). During the fax composition process, you can insert the following:

- Cover page (standard or custom designs; use Tools, Cover Page to create your own page)
- Images (Insert, Picture)
- File attachments (Insert, File Attachment)
- Text from TXT or HTML files (Insert, Text from File)
- Scanned documents (Insert, Pages from Scanner)

Click View, Preview to preview your fax before sending it (see Figure 7.14 B). Click Send to send the fax.


A
New Fax
File Edit View Insert Format Tools Help
Send
Contacts
To:
Subject:
Cover page notes:
B
Connecting video cables to your PCI-Express video card
File Edit View Insert Format Tools Help
confidential
fax

Cover Page: confident

Dialing rule: (None)

A The New Fax dialog.

B Previewing a fax before sending.

Figure 7.14

Sending a fax.

If Windows Fax and Scan is configured to receive faxes automatically, incoming faxes are saved to the current user's Inbox. Otherwise, you must respond to a notification of an incoming fax to receive the fax.

Scanning Documents with Windows Fax and Scan

The scanning portion of Windows Fax and Scan resembles our old friend the Scanner and Camera Wizard from Windows XP. However, it adds support for scanning profiles, so you can save and recall your preferences for image type, scan resolution, color format, paper size, and brightness/contrast settings. By default, Windows Fax and Scan uses 75dpi as its scanning resolution, so you will want to increase scanning resolution. (I recommend 300 dpi for photos and 200 dpi for faxed documents.)

Windows Fax and Scan provides a versatile, easy-to-use tool for communicating via fax and creating basic image scans.

NOTE

If you do not have Windows Fax and Scan in your Windows Vista edition, you can still scan images from Windows Photo Gallery.

👍 *Feature Rating:* ***Windows Fax and Scan***

Best and Worst Practices in Contact Management

Windows Vista gives you powerful tools for managing contacts. Here's how to make the most of them and avoid mistakes.

Best Contact Management Practices

- Develop a consistent method for creating trusted contacts—The easiest way to set up trusted contacts is via email. With Windows Mail, make sure you select the Leave Contact Options in Contact Format option in the Tools, Options menu. Use Send To rather than Send Contact from Windows Mail to ensure that your contact information can be used by the receiver.
- Create contact groups for contacts you typically deal with as a group—You can send emails to all the members of a contact group with a single click, but you can also contact selected members individually with their normal contact listings.
- Think before you click on an emailed URL—Even though Windows Mail is far more secure than Outlook Express, there can still be a lag between the time a new phishing email goes out and Windows Mail's filters are alerted to block it. Don't click on links purporting to be from financial institutions, eBay, PayPal, and so on: Log in manually. Hover your mouse over links to determine whether the link is authentic.
- Keep your Windows Contacts list up-to-date to make it easy to use Windows Mail, Windows Meeting Space, and other features in this chapter.

- If your display is significantly higher-resolution than others in your meeting, reduce the resolution to a commonly supported size such as 1024×768 before sharing your desktop or an application with Windows Meeting Space.
- When importing a calendar, choose the option to publish changes if you need to add or change appointments on that calendar.

Contact Management Practices to Avoid

- Don't create contact groups from individuals who don't normally communicate with each other—Because all recipients of a contact group are listed in the To: field of emails you send to the group, you might breach confidentiality requirements or expose members of the group to unwanted emails from other members. Use standard emails with BCC (blind carbon copy) to send messages to recipients to keep their email addresses confidential.
- Don't change other people's calendars without notifying them of changes—The easiest way to do this is to make sure the calendar is configured for automatic publishing of changes when you import it.
- Don't assume that appointment participants have an eye on the clock—Use the reminder feature to display a reminder a reasonable time before the appointment starts.
- Don't dismiss a reminder to clear it off your desktop—Instead, click the Snooze option to get a reminder again later.
- Don't fax documents that need to be edited by the recipient—Fax and Scan is designed primarily to communicate with people or institutions that don't use email. Use email attachments for documents that need comments or edits.
- Don't use Windows Fax and Scan to scan photos if your scanner's native TWAIN driver is also available—Many scanners include software with features such as color correction and restoration, histogram adjustments, and descreening. Use the scanner's own TWAIN driver for better results with photos.

Part III

Windows Vista at Play: Entertainment, Internet, and Networking

8 Mastering Windows Media Player 11 175

9 Windows Media Center the Vista Way 219

10 Gaming with Windows Vista 247

11 Internet the Windows Vista Way 267

12 Building a Home Network the Windows Vista Way 289

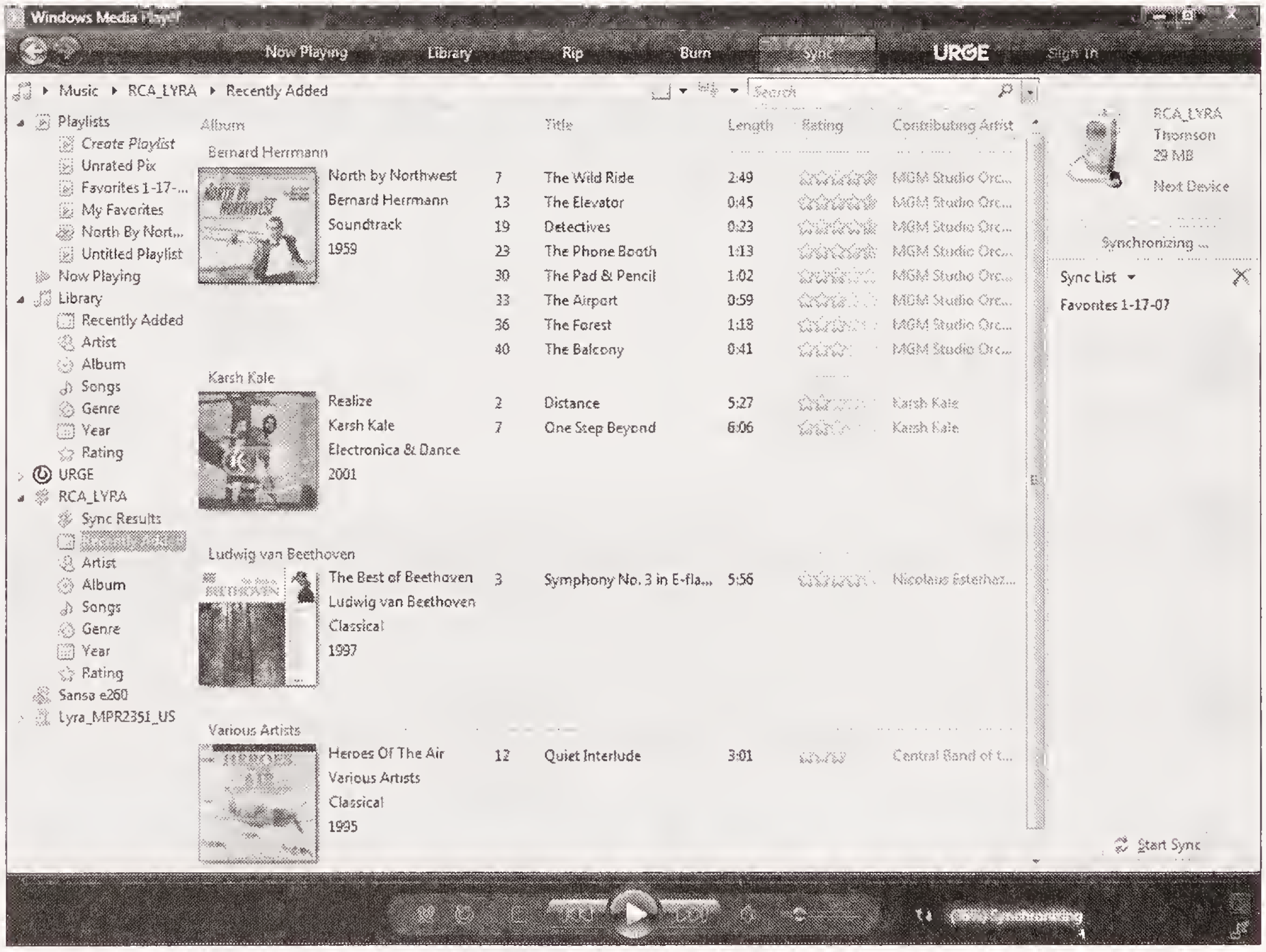
Chapter Eight

Mastering Windows Media Player 11

IN THIS CHAPTER

- How Microsoft's New Media Player Is the Master of Its Domain
- WMP 11's Play Controls
- Configuring WMP 11's Options
- Working with Audio in WMP 11
- Playing Video in WMP 11
- Media Sharing and Your Home Network
- Windows Media Player Tips and Tricks

How Microsoft's New Media Player Is the Master of Its Domain



Windows Media Player
Now Playing
Library
Rip
Burn
Sync
URGE
Sign In
Music ▸ RCA_LYRA ▸ Recently Added
Search
Playlists
Create Playlist
Unrated Pix
Favorites 1-17-...
My Favorites
North By Nort...
Untitled Playlist
Now Playing
Library
Recently Added
Artist
Album
Songs
Genre
Year
Rating
URGE
RCA_LYRA
Sync Results
Artist
Album
Songs
Genre
Year
Rating
Sansa e260
Lyra_MPR2351_US
RCA_LYRA
Thomson
29 MB
Next Device
Synchronizing ...
Sync List
Favorites 1-17-07
Start Sync
Synchronizing

Album		Title	Length	Rating	Contributing Artist
Bernard Herrmann North by Northwest Bernard Herrmann Soundtrack 1959	7	The Wild Ride	2:49		MGM Studio Orc...
	13	The Elevator	0:45		MGM Studio Orc...
	19	Detectives	0:23		MGM Studio Orc...
	23	The Phone Booth	1:13		MGM Studio Orc...
	30	The Pad & Pencil	1:02		MGM Studio Orc...
	33	The Airport	0:59		MGM Studio Orc...
	36	The Forest	1:18		MGM Studio Orc...
	40	The Balcony	0:41		MGM Studio Orc...
Karsh Kale Realize Karsh Kale Electronica & Dance 2001	2	Distance	5:27		Karsh Kale
	7	One Step Beyond	6:06		Karsh Kale
Ludwig van Beethoven The Best of Beethoven Ludwig van Beethoven Classical 1997	3	Symphony No. 3 in E-fla...	5:56		Nicolaus Esterhaz...
Various Artists Heroes Of The Air Various Artists Classical 1995	12	Quiet Interlude	3:01		Central Band of t...

It wouldn't seem like a new version of Windows if Microsoft didn't pony up a new version of Windows Media Player (WMP) to go with it. Vista is no exception—it includes version 11 of Windows Media Player as its dice-slice-rip-play multimedia powerhouse. With version 11, WMP offers big improvements in usability, support for portable media players, the Xbox 360 game console, CD and DVD burning, Internet access, network support, and file synchronization.

NOTE

After you configure WMP, you can start it directly from the QuickLaunch toolbar, next to the Start button, or from the Start menu. However, the first time you run it, you must run it from the Start menu.

WMP 11's Play Controls

When you start Windows Media Player, the Library view is displayed by default. The newly uncluttered Explorer-style interface uses a menu along the left side of the WMP display for selecting different views of your digital library (see Figure 8.1). The play controls are centered along the bottom center of the display, for easier access when running WMP 11 in a windowed mode.

WMP 11 enables you to move quickly from one level to another of a menu without excessive scrolling. In Figure 8.2, for example, you can click on either the navigation pane on the left or on the menu tree shown above the current item. This tree works just like the breadcrumb feature found in the Windows Explorer, except the available options are specific to Media Player. Note that by using the menu tree above the current item that some options can be selected that are not available from the left-hand menu, such as contributing artist, composer, parental rating, store, and folder.

① Menu tree

② Media navigation pane

③ Search field

④ Playlist pane toggle

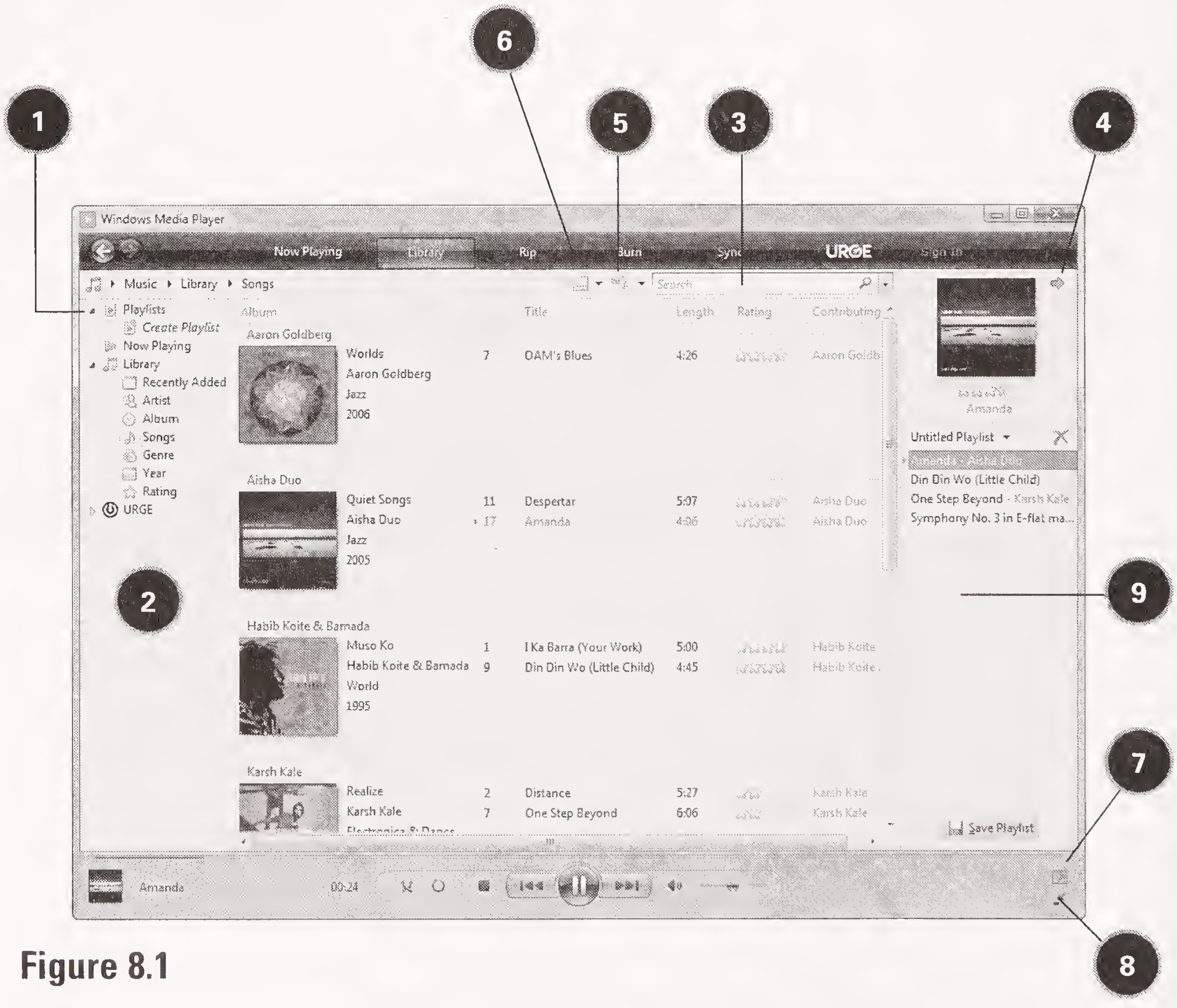
⑤ Layout options menu

⑥ View options menu

⑦ Switch to full-screen mode

⑧ Switch to skin mode

⑨ Playlist Pane


6
1
5
3
4
Windows Media Player
Now Playing
Library
Rip
Burn
Sync
URGE
Sign In
Music ▸ Library ▸ Songs
Search
Playlists
Create Playlist
Now Playing
Library
Recently Added
Artist
Album
Songs
Genre
Year
Rating
URGE
2
Amanda
Untitled Playlist
Amanda - Aisha Duo
Din Din Wo (Little Child)
One Step Beyond - Karsh Kale
Symphony No. 3 in E-flat ma...
9
Save Playlist
7
Amanda
00:24
8

Album		Title	Length	Rating	Contributing
Aaron Goldberg					
Worlds Aaron Goldberg Jazz 2006	7	OAM's Blues	4:26		Aaron Goldb
Aisha Duo					
Quiet Songs Aisha Duo Jazz 2005	11	Despertar	5:07		Aisha Duo
	17	Amanda	4:06		Aisha Duo
Habib Koite & Bamada					
Muso Ko Habib Koite & Bamada World 1995	1	I Ka Barra (Your Work)	5:00		Habib Koite
	9	Din Din Wo (Little Child)	4:45		Habib Koite .
Karsh Kale					
Realize Karsh Kale Electronica & Dance	2	Distance	5:27		Karsh Kale
	7	One Step Beyond	6:06		Karsh Kale

Figure 8.1

WMP 11 provides an uncluttered interface with fast access to major features.

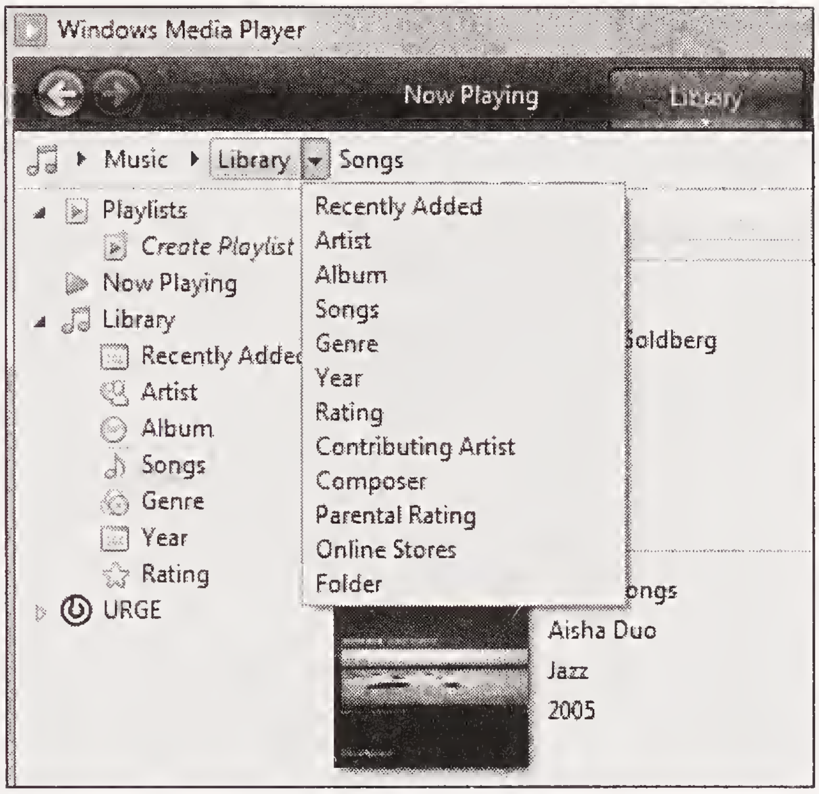

Windows Media Player
Now Playing
Library
Music
Library
Songs
Playlists
Create Playlist
Now Playing
Library
Recently Added
Artist
Album
Songs
Genre
Year
Rating
URGE
Recently Added
Artist
Album
Songs
Genre
Year
Rating
Contributing Artist
Composer
Parental Rating
Online Stores
Folder
Goldberg
Songs
Aisha Duo
Jazz
2005

Figure 8.2

Use the pull-down menu above the current selection for additional options.

Just like when using a web browser, you can use the Back and Forward arrow buttons on the top-left corner of the window to access previously viewed items in the Media Player window and then return to a more recent view.

Playback Controls

In WMP 11, the playback and appearance controls have been significantly redesigned from previous versions. These controls are located at the bottom of the screen, but the playback controls (refer to Figure 8.1) are now centered and offer easier-to-understand designs than in previous WMP versions.

➪ You can also use the Play menu to play media. See "Using the Now Playing Menu," p. 191, this chapter.

Multimedia File Types Supported by Windows Media Player 11

The following table lists the file types that WMP 11 supports. Use it to help you plan which file types you want WMP 11 to play, and which ones you'd prefer to leave available for a different program.

Media Type	Extension	Notes
Video	.mpv2, .mpg, .mp2v, .mpa, .m1v, .mp2,	MPEG movie
	.mpe, .mpeg, .avi	Windows video
Audio	.wav	Uncompressed audio file
	.aiff, .aif, .aifc	AIFF audio
	.au, .snd	AU audio
	.midi, .rmi, .mid	MIDI audio sequence
	.cda	CD audio track
Audio/Video	.asf, .wmv, .wm	Windows Media A/V
Playlists	.wmx, .wpl, .wvx, .m3u	Windows Media playlist
Shortcut	.wax	Windows Media
WMP Skins	.wms	Skin file
	.wmz	Skin package
Protocols for streaming Windows Media files	.MMST	Streaming using TCP
	.MMSU	Streaming using UDP
	.MMS	Streaming

Note that Apple's QuickTime A/V format is not supported by WMP 11; to get a player for QuickTime, visit http://www.apple.com/quicktime/win.html. To play back the AAC format used by Apple's iPod portable media players, use Apple's iTunes (http://www.apple.com/itunes/). Sony's ATRAC audio format is not supported by WMP 11; use an ATRAC-compatible media player and companion software for playback. See http://www.sony.net/Products/ATRAC3/ for details.

You can also view digital photos in common files types such as JPEG, TIFF, and others with WMP 11. Select Pictures as the media type or open the Library menu and select Pictures to view pictures in WMP 11. You can organize pictures by rating, by date taken, or by keyword tags. However, for more picture playback and editing options, use the Windows Photo Gallery (see Chapter 9 for details).

Keyboard Shortcuts in WMP 11

Don't be a mouseaholic! Give your mousing arm a rest and use the keyboard shortcuts in WMP 11 instead. Here's a comprehensive list of each shortcut and what it does.

Command	Keyboard Shortcut	Command	Keyboard Shortcut
Toggles Play/Pause	Ctrl+P	Open media	Ctrl+O
Previous track	Ctrl+B	Open URL	Ctrl+U
Next track	Ctrl+F	Close media	Ctrl+W
Rewind	Ctrl+Shift+B	New playlist	Ctrl+N
Fast forward	Ctrl+Shift+F	Add selection to library	F3
Shuffle	Ctrl+H	Full mode	Ctrl+1
Repeat	Ctrl+T	Skin mode	Ctrl+2
Increase volume	F10	Classic (top-level) menus	Ctrl+M
Decrease volume	F9	Refresh display	F5
Mute audio	F8	50% video size	Alt+1
Enable lyrics, captions, and subtitles (if available)	Ctrl+Shift+C	100% video size	Alt+2
Eject media	Ctrl+J	200% video size	Alt+3
		Help	F1

Classic Menus

By default, WMP uses a so-called "breadcrumb" and drop-down menu system. However, if you prefer the traditional menu bar (File, View, Tools, and so on), relax: it's not gone for good. WMP 11's traditional menus can be accessed in one of two ways: Right-click the lower-left corner of the display or press the Alt key on your keyboard and select Show Classic Menus. In any case the menus you can choose from include the following:

- The File menu can be used to open media or a specified URL, close media, save the current media file, create playlists, add selected media to a library, examine the properties of the currently selected media file, work offline, view recently played files, or to exit WMP 11.

- The View menu offers a huge number of options for adjusting the appearance of WMP 11 and how it plays media files. Using the View menu, you can select full or skin mode; go to other menus for the current media type; go to URGE or other online music stores; configure the Now Playing layout; download plug-ins; configure enhancements; select DVD features; view statistics, choose information (columns) to display for the current media type; and adjust video playback size.

➪ For more information on working with skins, see the sidebar "WMP's Skin Modes," p. 181, this chapter.

➪ For more information on working with visualizations, see "Using Visualizations," p. 192, this chapter.

➪ For more information on playing video, see "Playing Video in WMP 11," p. 210, this chapter.

- The Tools menu provides a quicker way to download visualizations, plug-ins, and skins, enable or disable plug-ins, and it provides easier management of media information and media usage rights. It also gives you fast access to the multi-tabbed Options menu. Use Tools as an alternative to wading through other menus.
- The Help menu provides a mixture of local and Internet-based help options, as is typical with recent Microsoft products. Click Windows Media Player Help or press F1 to bring up a hyperlinked help page with links to online resources. Click Windows Media Player Online to go to the official WMP page at Microsoft's website. Click Check for Updates to check for and install updates (when available); the Windows Media Configuration Manager pops up to let you know whether there are updates you can install. Unfortunately, there are no links to Options tabs or a repair tool in case WMP 11 gets hosed.

👎 *Feature Rating:* ***Help***

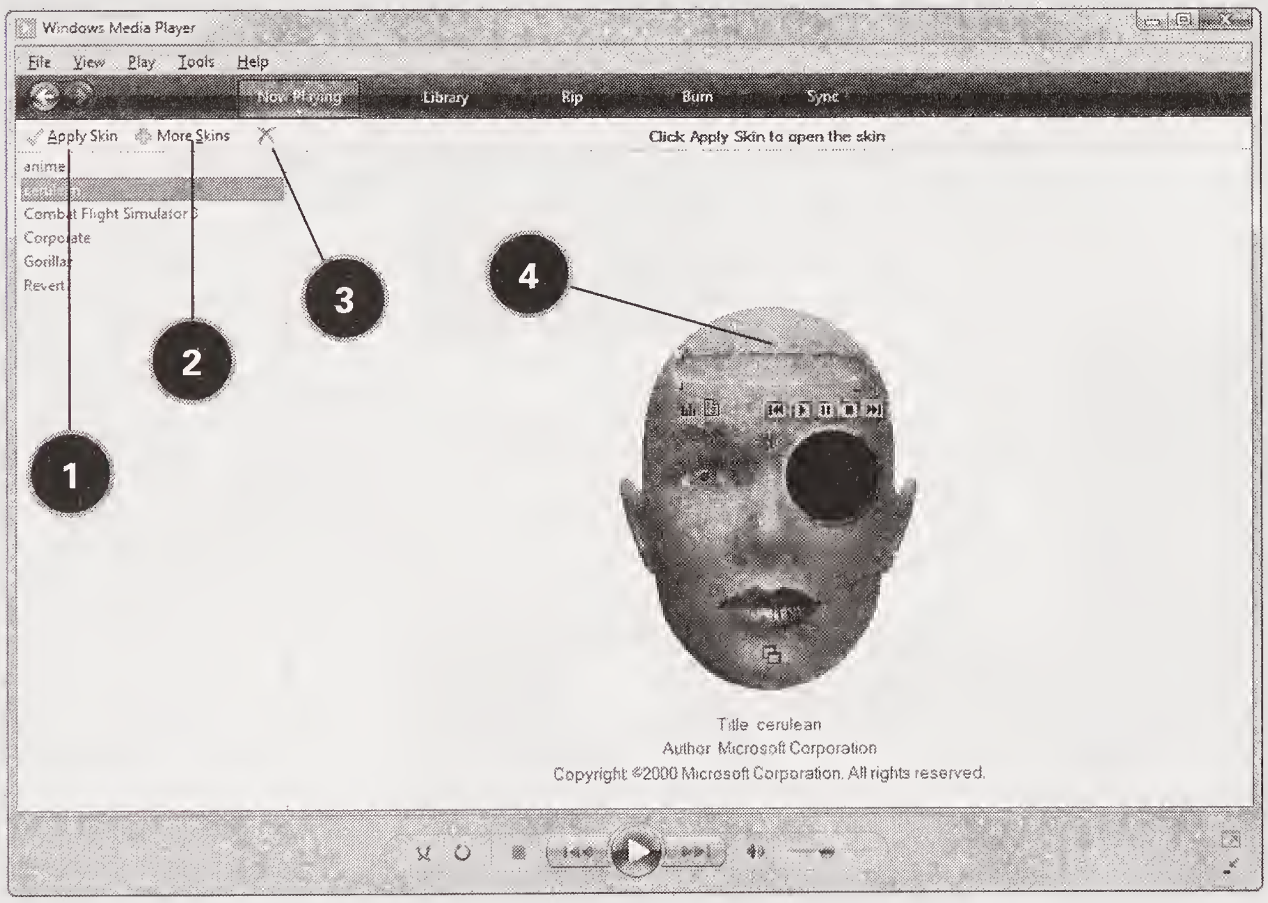
- The Play menu provides a complete range of play controls, including shuffle, repeat, audio and language tracks, volume, ejecting media, previous/next, and rewind/fast forward. The options available vary according to the media being played.

WMP 11's Skin Modes

If you like customizing your music player's appearance (and shrinking its onscreen presence down to a more manageable size), you'll love skinning WMP 11. Although WMP 11 includes only a couple of optional skins, including Corporate, which resembles the minimal interface used by old versions of WMP, and Revert, which is a reduced-size player window useful for digital music (and a carryover from WMP 10, by the way), you can download many more skins.

To see more choices, click Skin Chooser from the View menu and click More Skins from the Skin Chooser menu (see Figure 8.3) to open the Microsoft Skins for Windows Media Player web page. Browse skins, and click the Download link for each skin you want to try. To permit download, click Yes or Permit on any security warnings displayed.

Click View Now to use the skin as soon as it is downloaded, or click Close to leave it stored for later use. To revert to full mode after using a skin, right-click the skin and select Switch to Full Mode from the right-click menu. Follow the procedure in the preceding paragraph to download more skins.



Click Apply Skin to open the skin

Title cerulean
Author Microsoft Corporation
Copyright ©2000 Microsoft Corporation. All rights reserved.

1	Uses selected skin
2	Opens Microsoft skin download web page
3	Deletes selected skin
4	Preview of selected skin

Figure 8.3

WMP 11's Skin Chooser menu after downloading optional skins.

WMP 11 can use the same skins as WMP 10 and earlier versions, so you can recycle your favorite skins. To learn how to make your own skins, follow the link to the MSDN website from the Skins for Windows Media Player web page.

Downloading and Using Media Player Plug-ins and Enhancements

There are many types of plug-ins you can get to improve WMP 11:

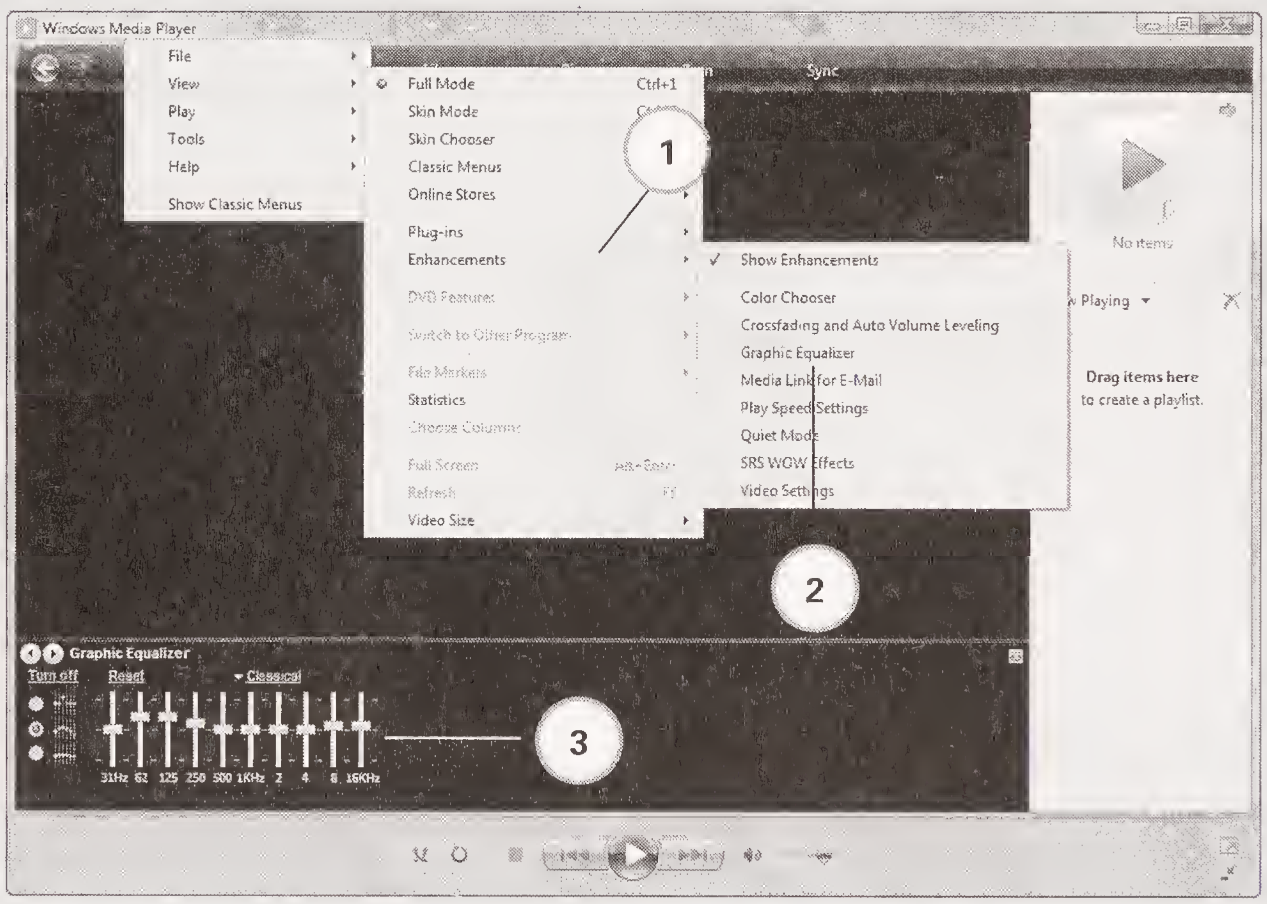
- Audio effects (DSP)
- Rendering
- Other types

To see what's available, click View, Plug-ins, Find On the Web, which opens the Microsoft Plug-ins for Windows Media Player web page. Follow the web browser and security prompts to download, run, and install the plug-in you select.

After you install a plug-in, it appears on the plug-ins menu and also in the Tools menu.

Some plug-ins have two or more components. In such cases, make sure all components are checkmarked. To disable the plug-in, click the entries to clear their check marks. To re-enable the plug-ins, click the entries again.

Before you download a plug-in for WMP 11, make sure that Media Player doesn't already have the feature you want. WMP 11 includes a number of built-in enhancements to improve audio and video playback and other features. To select an enhancement, select View, Enhancements, Show Enhancements, and select an enhancement from the menu (see Figure 8.4).


Windows Media Player
File
View
Play
Tools
Help
Show Classic Menus
Full Mode Ctrl+1
Skin Mode
Skin Chooser
Classic Menus
Online Stores
Plug-ins
Enhancements
DVD Features
Switch to Other Program
File Markers
Statistics
Choose Columns
Full Screen
Refresh
Video Size
Sync
✓ Show Enhancements
Color Chooser
Crossfading and Auto Volume Leveling
Graphic Equalizer
Media Link for E-Mail
Play Speed Settings
Quiet Mode
SRS WOW Effects
Video Settings
No items
Playing
Drag items here
to create a playlist.
Graphic Equalizer
Turn off
Reset
Classical
31Hz 62 125 250 500 1KHz 2 4 8 16KHz
1
2
3

1 Check to show enhancements

2 Selected enhancement

3 User interface for selected enhancement

Figure 8.4

Enabling the Graphic Equalizer enhancement.

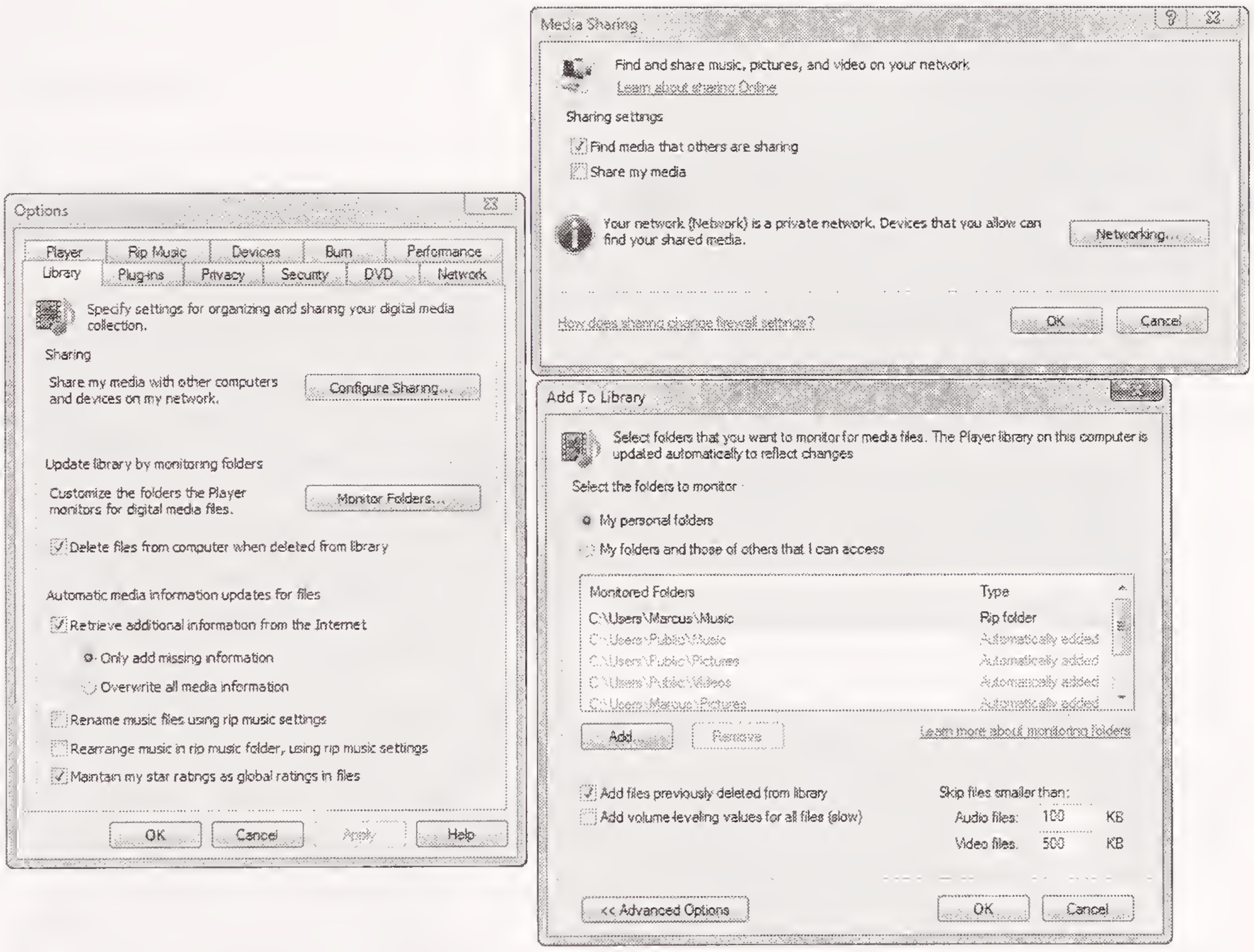
The enhancement's user interface shows up in the same lower portion of the display as a plug-in uses. Note that WMP 11 supports the use of only one plug-in or enhancement at a time.

Configuring WMP 11's Options

Several menus shown earlier in this chapter include their own Options menus. When you select Options in any menu of WMP 11, you open the corresponding tab of the Options dialog.

While most of the options tabs are similar to those found in WMP 10, some of them include some new features:

- The Library Options tab (see Figure 8.5) includes new options for sharing media over a home network and for auto-leveling of audio files.


Options
Player
Rip Music
Devices
Burn
Performance
Library
Plug-ins
Privacy
Security
DVD
Network
Configure Sharing...
Monitor Folders...
OK
Cancel
Apply
Help
Media Sharing
Learn about sharing Online
Networking...
How does sharing change firewall settings?
OK
Cancel
Add To Library
Add...
Remove
Learn more about monitoring folders
<< Advanced Options
OK
Cancel

Specify settings for organizing and sharing your digital media collection.

Sharing

Share my media with other computers and devices on my network.

Update library by monitoring folders

Customize the folders the Player monitors for digital media files.

☑ Delete files from computer when deleted from library

Automatic media information updates for files

☑ Retrieve additional information from the Internet

● Only add missing information

○ Overwrite all media information

☐ Rename music files using rip music settings

☐ Rearrange music in rip music folder, using rip music settings

☑ Maintain my star ratings as global ratings in files

Find and share music, pictures, and video on your network

Sharing settings

☑ Find media that others are sharing

☐ Share my media

Your network (Network) is a private network. Devices that you allow can find your shared media.

Select folders that you want to monitor for media files. The Player library on this computer is updated automatically to reflect changes

Select the folders to monitor

● My personal folders

○ My folders and those of others that I can access

Monitored Folders	Type
C:\Users\Marcus\Music	Rip folder
C:\Users\Public\Music	Automatically added
C:\Users\Public\Pictures	Automatically added
C:\Users\Public\Videos	Automatically added
C:\Users\Marcus\Pictures	Automatically added

☑ Add files previously deleted from library

☐ Add volume leveling values for all files (slow)

Skip files smaller than:

Audio files: 100 KB

Video files: 500 KB

Figure 8.5

Manage media sharing, ripped music, and media folders with the Library Options tab.

➪ For more information about setting up Media Sharing, see "Media Sharing and Your Home Network," p. 214, this chapter.

TIP

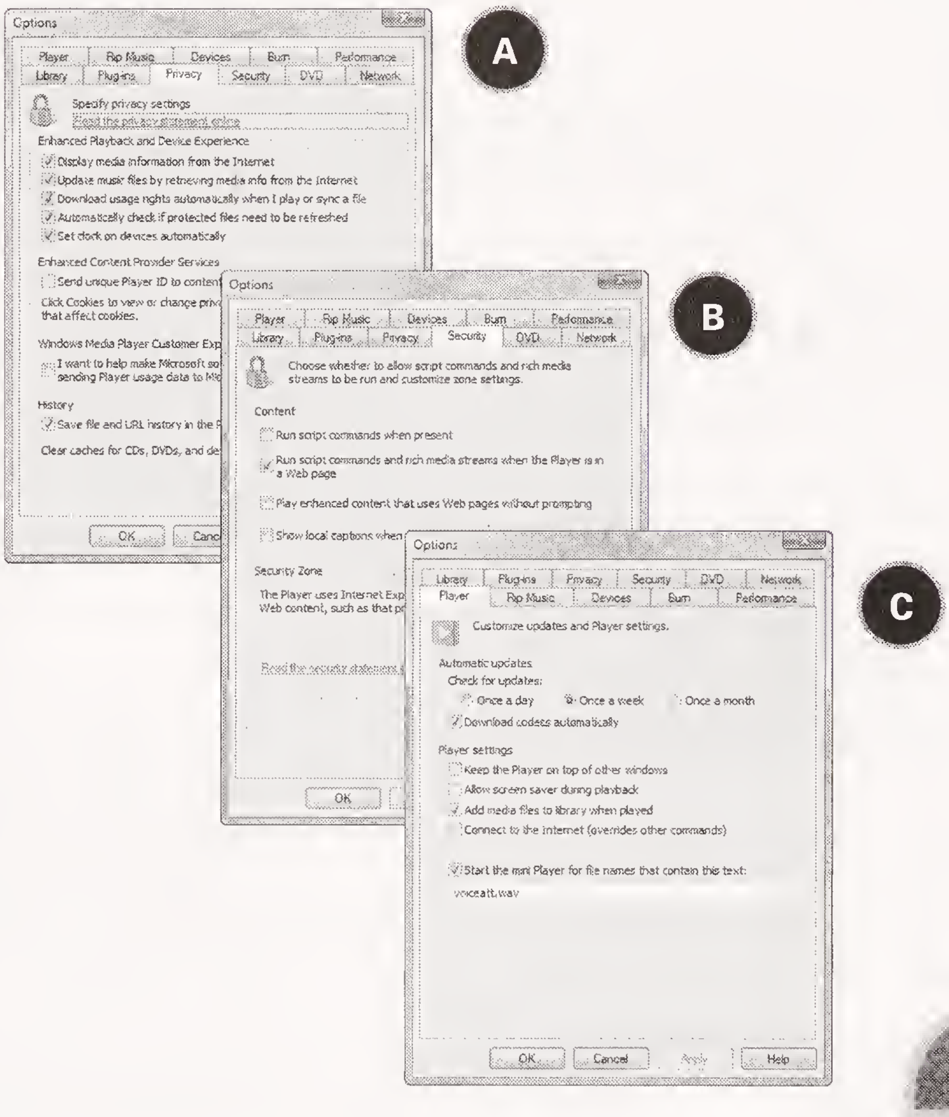
Because the Options dialog is multi-tabbed, you can access any tab at any time. This makes the Options dialog an excellent alternative to threading your way through WMP 11's many menus to manage media and playback settings.

WARNING

By default, media you delete from your library is also deleted from the computer. Make sure that any library files you want to delete are backed up elsewhere, or clear the Delete Files... check box. This is especially important if you enable the option to include media played from removable drives or network folders in your library on the Player Options tab. If you delete network files from your library with the default setting for deleting library files enabled, you could remove them from another user's system!

- The Privacy Options tab (see Figure 8.6 A) includes a new option for downloading usage rights automatically when you play or sync a file. It's enabled by default, but the default setting means you won't be notified of problems. I recommend clearing this check box as well as the Automatically check if protected files need to be refreshed check box.

- The Security tab (see Figure 8.6 B) now permits script commands and rich media streams to run inside a web page
- The Player tab (see Figure 8.6 C) includes a new option for starting WMP in mini-player mode. There's also an option to start the mini-player automatically whenever a specified filename is activated. For example, to play back voicemail messages (often stored as "voiceatt.wav").



Specify privacy settings
Read the privacy statement online

Enhanced Playback and Device Experience
☑ Display media information from the Internet
☑ Update music files by retrieving media info from the Internet
☑ Download usage rights automatically when I play or sync a file
☑ Automatically check if protected files need to be refreshed
☑ Set clock on devices automatically

Enhanced Content Provider Services
☐ Send unique Player ID to content
Click Cookies to view or change priv
that affect cookies.

Windows Media Player Customer Exp
☐ I want to help make Microsoft so
sending Player usage data to Mic

History
☑ Save file and URL history in the P
Clear caches for CDs, DVDs, and de

Choose whether to allow script commands and rich media streams to be run and customize zone settings.

Content
☐ Run script commands when present
☑ Run script commands and rich media streams when the Player is in a Web page
☐ Play enhanced content that uses Web pages without prompting
☐ Show local captions when

Security Zone
The Player uses Internet Exp
Web content, such as that p
Read the security statement

Customize updates and Player settings.

Automatic updates
Check for updates:
○ Once a day ● Once a week ○ Once a month
☑ Download codecs automatically

Player settings
☐ Keep the Player on top of other windows
☐ Allow screen saver during playback
☑ Add media files to library when played
☐ Connect to the Internet (overrides other commands)

☑ Start the mini Player for file names that contain this text:
voiceatt.wav

A *Privacy*

B *Security*

C *Player*

Figure 8.6

Options tabs with new features.

The other options tabs you can use to configure Media Player require a bit more explanation. The Rip Music options tab, for example, provides a one-stop destination for configuring where to store and how to rip your music. Using this dialog saves time over working with the normal Rip menu.

You can now select two uncompressed (lossless) ripping formats: Windows Media Audio Lossless and WAV, and four compressed (lossy) ripping

WARNING

You can always convert a lossless format to a lossy format to save space on a portable media player (use the Device Options dialog's Advanced settings to configure conversion settings). Keep in mind that you can never restore the audio quality lost when you use lossy audio ripping.

formats: Windows Media Audio, Windows Media Audio Pro, Windows Media Audio (variable bit rate), and MP3. These additional options make it easier to select the best format for your needs and better support the wide range of digital music-capable devices on the market.

To determine the default settings used for each type of digital audio, select the format and look at the audio quality pointer at the bottom of the dialog. If you prefer a higher-quality default for any (or all) file formats supported by WMP, use this tab to adjust them.

Use Table 8.1 as a quick reference to each recording format supported by WMP 11. The highest bit rate in each format provides best quality but also the largest file size.

The Devices options tab, which provides shortcuts to the properties sheets for your optical drive(s), display, attached portable media devices and speakers, is unchanged from WMP 10's version. However, for better performance and video quality, consider changing many of the defaults on this menu. Here's what I recommend:

- If your system slows down significantly when you convert video, disable the Allow Video Files to Convert in the Background option.
- If your system has a dual-core or quad-core processor or two or more physical processors, try enabling both the video and audio background conversion options. These systems handle multitasking far better than single-core processors.
- If you see jagged lines or other types of distortion when you convert video, enable the Deinterlace... option.
- For best video quality, enable the Choose Quality Over Speed... option (which increases conversion time).
- If you're short of space on your primary hard disk (less than 1GB free) and you have a second physical hard disk with a lot of space, change the default location of the Transcoded Files Cache folder to a folder on that hard disk. For example, if your second physical hard disk is identified as E: drive, create a folder called Transcoded Files on that hard disk. Create a folder for each user in that folder. You can then change the location for user Marcus (for example) to E:\Transcoded Files\Marcus. When you create the folder Marcus, use the Security tab

WARNING

Although the default 128Kbps WMA file format setting isn't necessarily a bad choice, this is *your* music collection we're talking about. Do you really want to settle for adequate? (And before you answer, consider the time penalty you'll pay re-ripping your entire collection, should you change your mind and want to rip to a better quality.) Classical music and symphonic movie soundtrack fans in particular, might prefer different formats or higher bit rates.

to set the properties for the folder so that Marcus is the only user with full access to the folder.

Table 8.1 WMP 11's Recording Formats

Recording Format	Extension	Supported Bit Rates	Copy Protection Option	Notes
Windows Media Audio	WMA	48Kbps 64Kbps 96Kbps 128Kbps[1] 160Kbps 192Kbps	Yes	Use higher bit rates for classical and symphonic music; lower bit rates for spoken word or to create smaller files.
Windows Media Audio Pro	WMA	32Kbps 48Kbps 64Kbps[1] 96Kbps 128Kbps 160Kbps 192Kbps	Yes	Supports up to 5.1 surround audio; provides comparable quality to standard WMA at half the bit rate; also optimized for Windows-based smartphones.
Windows Media Audio Variable Bit Rate (VBR)	WMA	40–75Kbps 50–95Kbps 85–145Kbps 135–215Kbps 240–355Kbps	Yes	Some older WMA-compatible players may not be able to handle VBR recordings.
Windows Media Audio Lossless	WMA	470–940Kbps[2]	Yes	Performs no file compression for quality identical to original; creates very large music files.
MP3	MP3	128Kbps 192Kbps 256Kbps 320Kbps	No (Hooray!)	Works with virtually any portable music player.
WAV	WAV	1411.2 Kbps	No	Performs no file compression for quality identical to original; creates very large music files (larger than WMA lossless); best choice for audio that needs additional editing before use.

[1] *Default bit rate in Windows Media Player*

[2] *Bit rate automatically adjusted during recording*

To clean up outdated cache files, click Delete Files.

To configure synchronization and conversion options for your portable media device, select it from the Devices tab and click Properties. Use the Sync tab to configure when file synchronization starts and to reserve space on the device for other programs. Use the Quality tab to specify the quality level for music, TV, and video files synched to the device.

Use the brand-new Burn options tab, shown in Figure 8.7 A, to control burn speed, audio leveling, media information storage settings, and downsampling conversion to stuff more information on a disc (not recommended, but you have the option if you want it).

By default, files on CDs or DVDs burned with WMP 11 are organized by media type (for example, \Music\Artist\Album, \TV, \Video, and \Picture), with folders known as \Unknown Artist and \Unknown Album used for media that lack this information. If you clear this option, all media files are stored in the root folder of the media.

Enabling the option to convert media to a lower bit rate also changes MP3 and WAV files into WMA format, slows down the burn process, and reduces music quality (how much depends on the bit rate you select and the type of music you're converting). It does, however, allow you to squeeze more media content onto the disc.

TIP

To find out how many physical hard disks your system has (and the drive letter used for the second drive, right-click Computer and select Manage. Open Storage, Disk Management, and the hard disks and optical drives in your system are displayed. The first hard disk is displayed as Disk 0. If you have two or more hard disks installed, the second hard disk is Disk 1, and so on. Use a drive letter on Disk 1 or higher to speed up transcoding and other functions, including paging files.

Finally, there's the Performance tab (see Figure 8.7 B), which offers new features to support WMP 11's new DVD playback features.

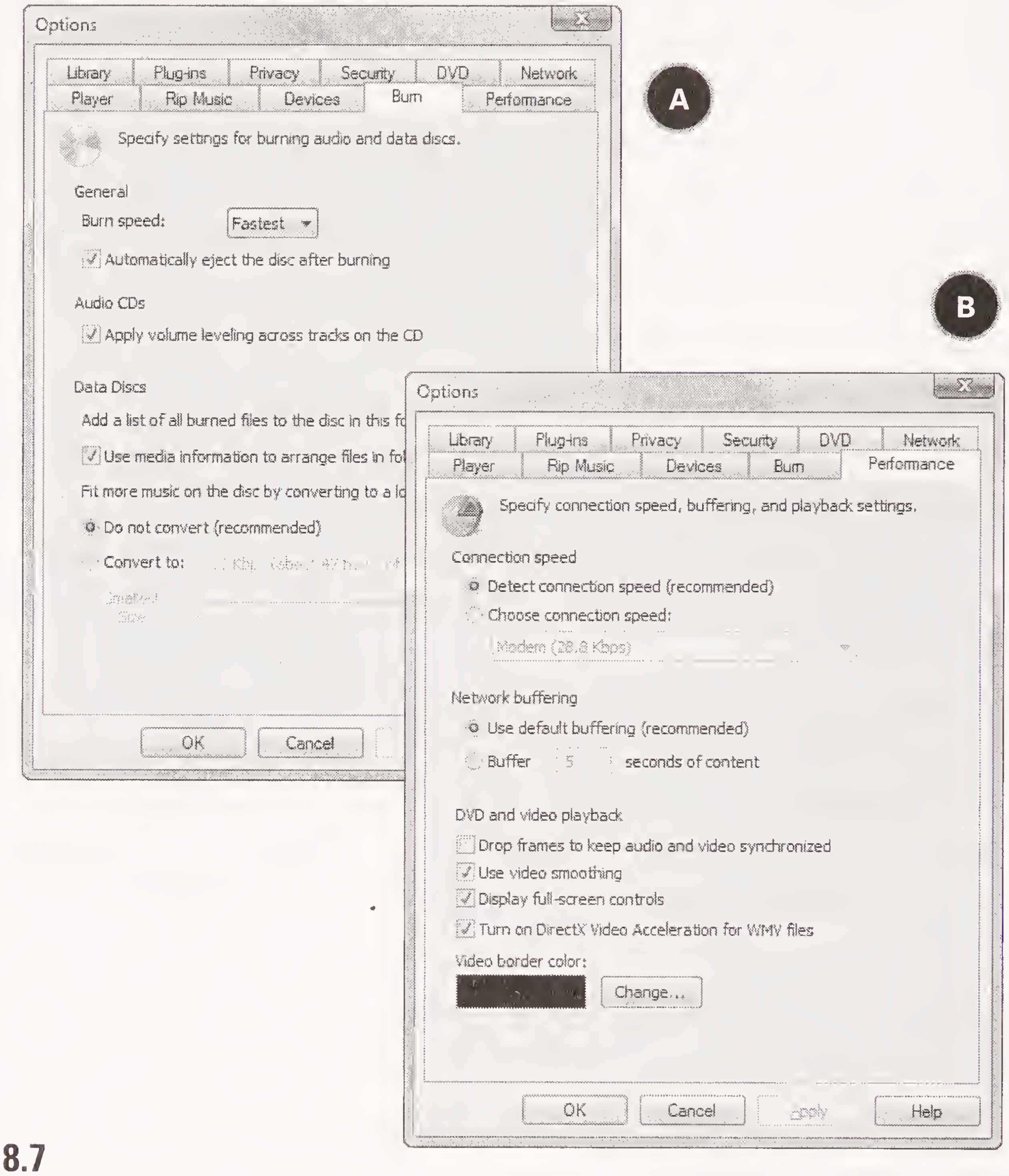
Consider adjusting the default settings if you have the following problems with media playback:

- If you are not satisfied with the quality of streaming media from the Internet, try setting the connection speed manually.
- If you frequently have congestion problems that cause jerky playback of streaming media, try adjusting the Network Buffering setting manually, increasing it from the default of 5 seconds.
- If audio and video are frequently out of sync with each other, enable the Drop Frames... option.

- If you are not satisfied with playback speed or smoothness when playing DirectX or DVD video, select the Enable DxVA Video Acceleration option.

A Burn

B Performance


Options
Library
Plug-ins
Privacy
Security
DVD
Network
Player
Rip Music
Devices
Burn
Performance
A
OK
Cancel
B
Options
Library
Plug-ins
Privacy
Security
DVD
Network
Player
Rip Music
Devices
Burn
Performance
Change...
OK
Cancel
Apply
Help

Specify settings for burning audio and data discs.

General

Burn speed: Fastest

☑ Automatically eject the disc after burning

Audio CDs

☑ Apply volume leveling across tracks on the CD

Data Discs

Add a list of all burned files to the disc in this fo

☑ Use media information to arrange files in fo

Fit more music on the disc by converting to a lo

● Do not convert (recommended)

○ Convert to:

Specify connection speed, buffering, and playback settings.

Connection speed

● Detect connection speed (recommended)

○ Choose connection speed:

Modem (28.8 Kbps)

Network buffering

● Use default buffering (recommended)

○ Buffer 5 seconds of content

DVD and video playback

☐ Drop frames to keep audio and video synchronized

☑ Use video smoothing

☑ Display full-screen controls

☑ Turn on DirectX Video Acceleration for WMV files

Video border color:

Figure 8.7

Option tabs featuring support for DVD burning and playback.

NOTE

By default, quality levels for files transferred to a portable device are selected automatically. If you override this setting and set the quality level yourself, you may use more space on your player than the default would without hearing (or seeing) a corresponding increase in quality from larger files. Let's face it: tiny earbuds are no match for a 5.1 or 7.1 surround audio system, and a 320×240 screen can't compete with a 21-inch widescreen LCD display (let alone a DLP or plasma display!).

Working with Audio in WMP 11

WMP 11 includes many new and improved features for audiophiles, including an easier-to-use interface, new ways of organizing your music, more ripping options, better file synchronization, and others.

WMP 11 gives you a bunch of options for getting down with your favorite tunes. Select an audio track in Library view and click the Play button, and it starts playing immediately.

For other play options, right-click a tune to view play options:

- Play—Plays selected track only
- Play All—Plays all tracks in selected album
- Add to Now Playing—Adds selected track(s) to Now Playing playlist
- Add to—Adds selected track(s) to a specified playlist

Music Library Viewing Options

WMP11 makes it easier to find the right music for the mood than ever before. In Library mode, you can select any of the following views to instantly organize your library:

- Recently added—Displays the most recent additions to your digital music collection with the same display options used by the Songs view.
- Artist—Displays albums in order by artist name, including album art, number of songs, average song rating, and total time (in minutes) for each album (see Figure 8.8 A).
- Album—Displays albums in order by album name, including album art and contributing artist/group.
- Songs—Displays the songs in each album in order by artist name, and includes album art, track number, duration (minutes:seconds), genre, album date, song rating, and contributing artist (see Figure 8.8 B).
- Genre—Groups albums by genre, average song rating, and total time (in minutes).
- Year—Displays albums sorted by decade, and groups albums produced in a particular year together, including album art, date, total time (in minutes), and average song rating (see Figure 8.8 C).

NOTE

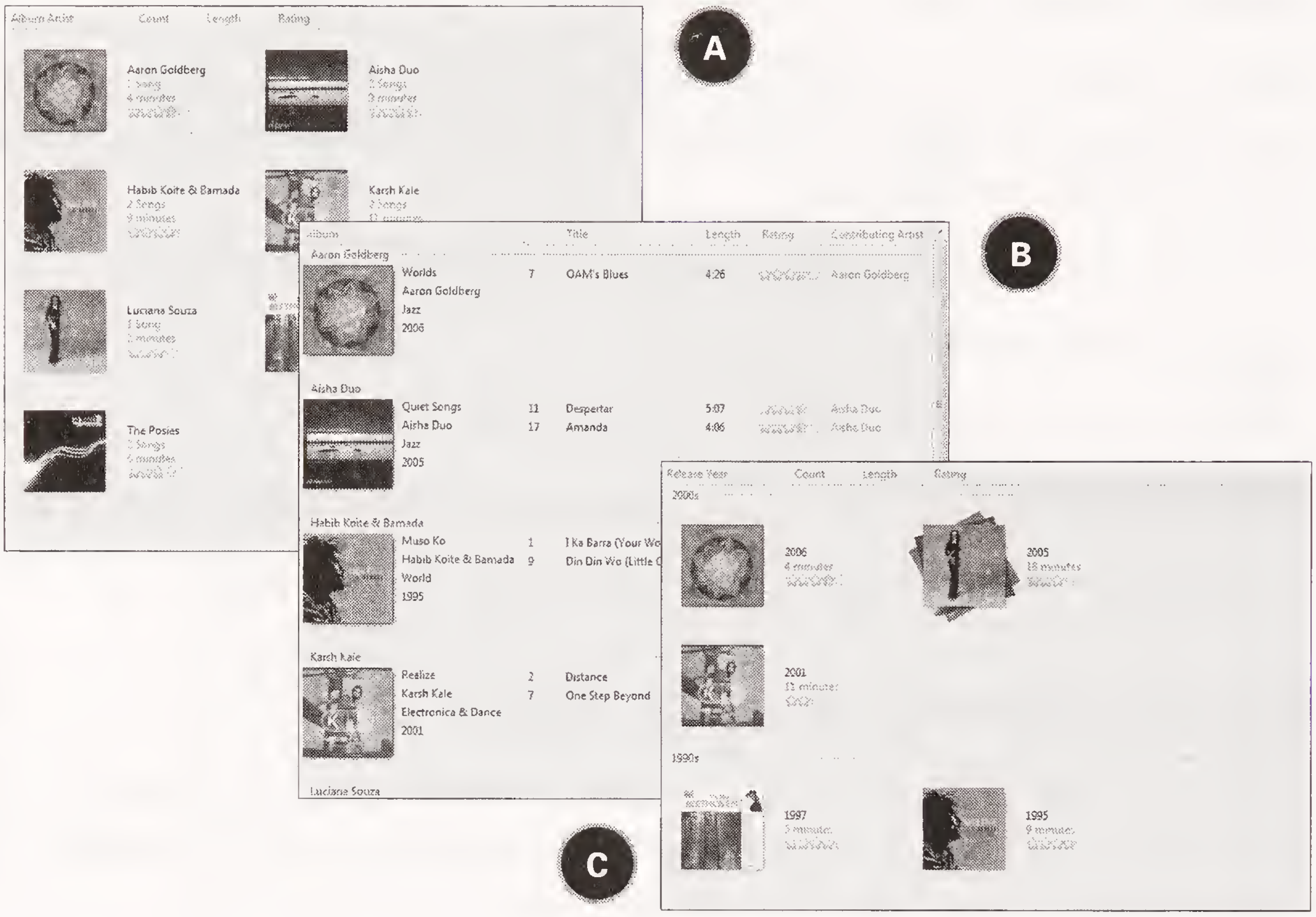
First Names Only

The Artist view sorts albums by the first name of the artist or group. Thus, Ludwig van Beethoven is listed before The Posies.

TIP

Windows Media Player 11, like other parts of Windows Vista, stacks related items together (see the year 2005 in Figure 8.8 C for an example). When more than one item is visible in a stack, double-click the stack to see all the stacked items.

- Ratings—Displays star ratings you assign (My Ratings) and Auto Ratings (based on how often you play an album. Click each star to see which songs received the rating.


A
B
C
Album Artist
Count
Length
Rating
Aaron Goldberg
Aisha Duo
Habib Koite & Bamada
Karsh Kale
Luciana Souza
The Posies
Album
Title
Contributing Artist
Worlds
OAM's Blues
4:26
Jazz
2006
Quiet Songs
Despertar
Amanda
2005
Muso Ko
World
1995
Realize
Distance
One Step Beyond
Electronica & Dance
2001
Release Year
2000s
1990s
2006
2005
2001
1997
1995

A Artist view

B Songs view

C Year view

Figure 8.8

Various Music Library views.

To choose additional views (contributing artist, composer, parental rating, online stores, and folder), click the Library icon in the left pane.

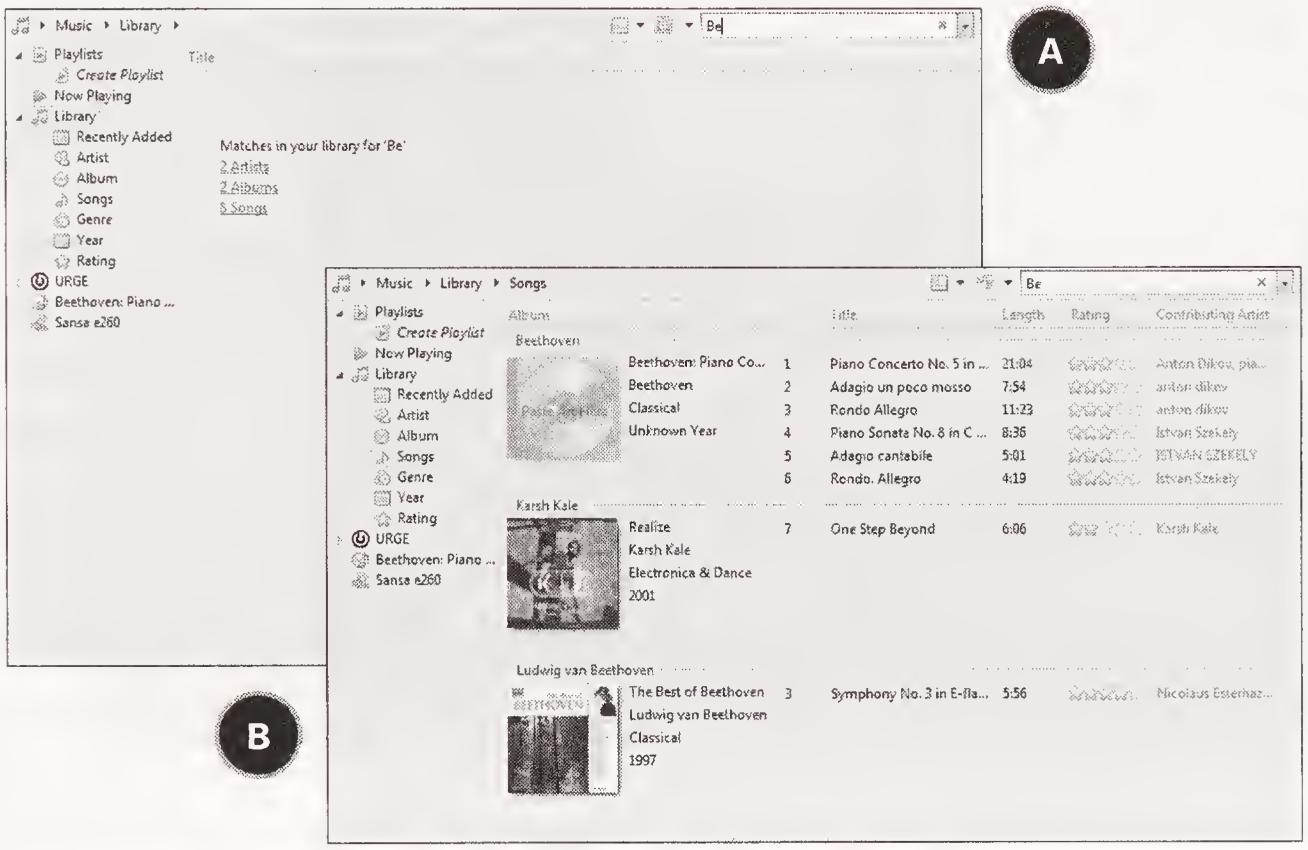
👍 *Feature Rating:* ***Music Library***

Searching for Media with WordWheel

WMP 11 features a search tool powered by Vista's WordWheel search technology in the upper-right corner of the main program window. Before entering search text, select the view to search from the left-hand menu. If you select Library or Playlists before entering search text, WMP 11 displays artists, album titles, or song titles that match the text entered. Note that WMP 11 also searches your music store (if any) for matches.

To search for specific artists, songs, or albums, highlight the applicable view under My Library before entering search text.

In Figure 8.9 A, the search text "Be" was used after selecting Library, resulting in matches with two artists, two albums, and eight songs in the local library. To see the matches, click the underlined links. Figure 8.9 B shows the results for the same search text if the Songs view is selected, again resulting in eight songs, but this time across three albums.



Matches in your library for 'Be'
2 Artists
2 Albums
5 Songs

Album			Title	Length	Rating	Contributing Artist
Beethoven						
	Beethoven: Piano Co...	1	Piano Concerto No. 5 in ...	21:04		Anton Dikov, pia...
	Beethoven	2	Adagio un poco mosso	7:54		anton dikov
	Classical	3	Rondo Allegro	11:23		anton dikov
	Unknown Year	4	Piano Sonata No. 8 in C ...	8:36		Istvan Szekely
		5	Adagio cantabile	5:01		ISTVAN SZEKELY
		6	Rondo. Allegro	4:19		Istvan Szekely
Karsh Kale						
	Realize Karsh Kale Electronica & Dance 2001	7	One Step Beyond	6:06		Karsh Kale
Ludwig van Beethoven						
	The Best of Beethoven Ludwig van Beethoven Classical 1997	3	Symphony No. 3 in E-fla...	5:56		Nicolaus Esterhaz...

A Library view

B Songs view

Figure 8.9

Searching for media with WMP's WordWheel search match feature.

The Search tool can also be used to locate any other type of media that WMP 11 supports, such as pictures, video, recorded TV, or other media.

For more information about using the Playlist feature, see "Creating Playlists," p. 200, this chapter.

Feature Rating: ***Search***

TIP

After you find the media you're looking for with a WordWheel search, select it and drag it to the Playlist pane for an instant playlist.

Using the Now Playing Menu

The Now Playing menu, at its core, does exactly what it says. It shows you what's currently playing, along with any other music you have in your current playlist. However, it allows you to select what enhancements, visualizations, and plug-ins you want to use while your music is playing (see Figure 8.10).

When Show Enhancements is checked, the selected enhancement is displayed. When Show List Pane is checked, the current song list is shown on the right side of the WMP window. As Figure 8.10 shows, you can use an enhancement while also enjoying visualizations.

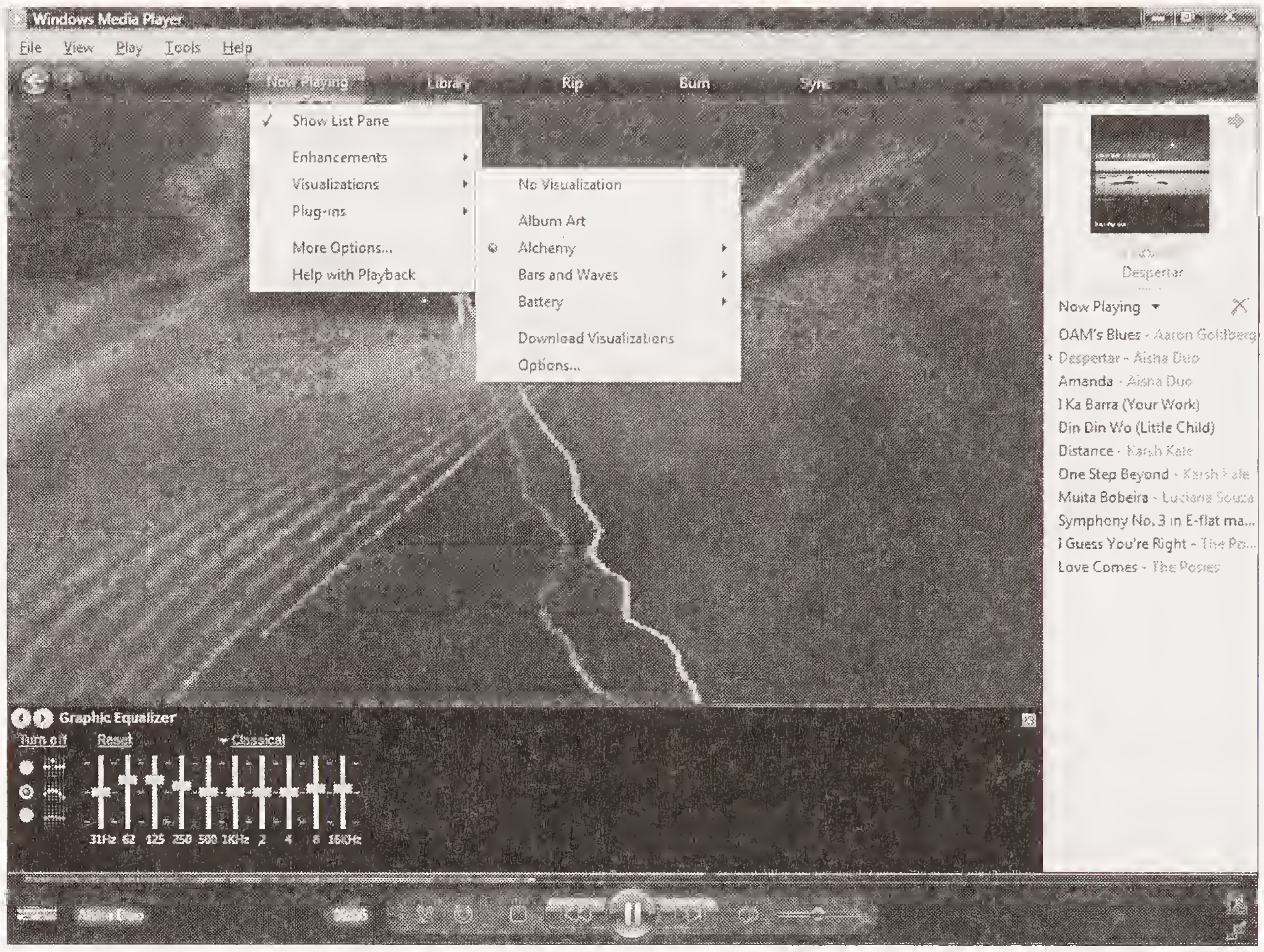

Windows Media Player
File View Play Tools Help
Now Playing
Library
Rip
Burn
Sync
✓ Show List Pane
Enhancements
Visualizations
Plug-ins
More Options...
Help with Playback
No Visualization
Album Art
Alchemy
Bars and Waves
Battery
Download Visualizations
Options...
Despertar
Now Playing
OAM's Blues - Aaron Goldberg
Despertar - Aisha Duo
Amanda - Aisha Duo
I Ka Barra (Your Work)
Din Din Wo (Little Child)
Distance - Karsh Kale
One Step Beyond - Karsh Kale
Muita Bobeira - Luciana Souza
Symphony No. 3 in E-flat ma...
I Guess You're Right - The Po...
Love Comes - The Posies
Graphic Equalizer
Turn off
Reset
Classical
31Hz 62 125 250 500 1KHz 2 4 8 16KHz

Figure 8.10

The Now Playing menu with enhancements, the list pane, and visualizations enabled.

The Plug-ins menu selection provides yet another way to download, select, or enable a plug-in. Selecting Options opens the Plug-ins options tab. Selecting Visualizations opens the Visualizations menu shown in Figure 8.10, which is detailed in the next section.

Using Visualizations

Earlier versions of WMP pioneered the use of visualizations, abstract patterns or animations that change as music plays. WMP 11's installed choices are similar to those provided by WMP 10, including

- Album Art
- Alchemy
- Bars and Waves
- Battery (the default)

Bars and Waves offers several variations, whereas Battery offers more than two dozen variations, including a Randomization option. To see the selected visualization while your music plays, click the Now Playing drop-down menu and open the Visualizations submenu (refer to Figure 8.10).

If you want more choices, click Download Visualizations. This opens the Microsoft Visualizations for Windows Media Player web page.

Downloadable visualizations include adaptations from popular live-action and animated movies, slideshow players with animated transitions, as well as abstract animations similar to those packaged with WMP 11.

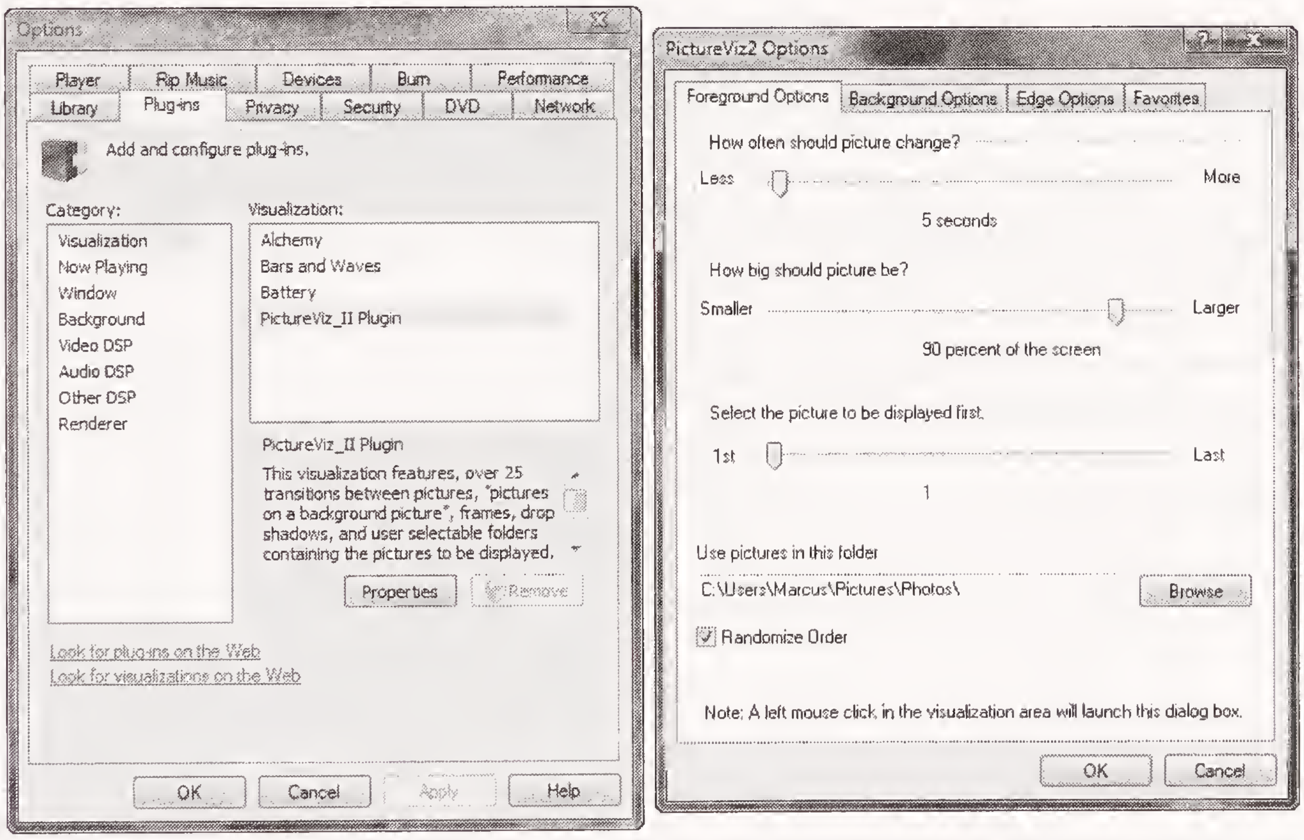
To use a visualization, click Download and follow the onscreen prompts to Run or Open the visualization file when prompted. If the User Accounts Control warning dialog box appears, click Allow.

TIP

WMP 11 can use the same visualizations as WMP 10, so you can recycle your favorite visualizations. To learn how to make your own visualizations, follow the link on the web page to the MSDN website.

Now, you can go back to Windows Media Player, select the visualization you downloaded, select an option if provided, and open the Now Playing menu to see it in action.

In some cases, you may need to configure the visualization before you can use it. To configure the selected visualization, select Options from the Now Playing menu to open the Plug-ins Options tab. Select Visualization from the category menu, then select the visualization and click Properties to open the properties sheet for the visualization (see Figure 8.11).


Options
Player
Rip Music
Devices
Burn
Performance
Library
Plug-ins
Privacy
Security
DVD
Network
Add and configure plug-ins.
Category:
Visualization
Now Playing
Window
Background
Video DSP
Audio DSP
Other DSP
Renderer
Visualization:
Alchemy
Bars and Waves
Battery
PictureViz_II Plugin
Properties
Remove
Look for plug-ins on the Web
Look for visualizations on the Web
OK
Cancel
Apply
Help
PictureViz2 Options
Foreground Options
Background Options
Edge Options
Favorites
Less
More
Smaller
Larger
1st
Last
Browse
OK
Cancel

PictureViz_II Plugin

This visualization features, over 25 transitions between pictures, "pictures on a background picture", frames, drop shadows, and user selectable folders containing the pictures to be displayed.

How often should picture change?

5 seconds

How big should picture be?

90 percent of the screen

Select the picture to be displayed first.

1

Use pictures in this folder

C:\Users\Marcus\Pictures\Photos\

☑ Randomize Order

Note: A left mouse click in the visualization area will launch this dialog box.

Figure 8.11

Configuring the background image settings for the optional Picture Viz II visualization.

Ripping Music with WMP 11

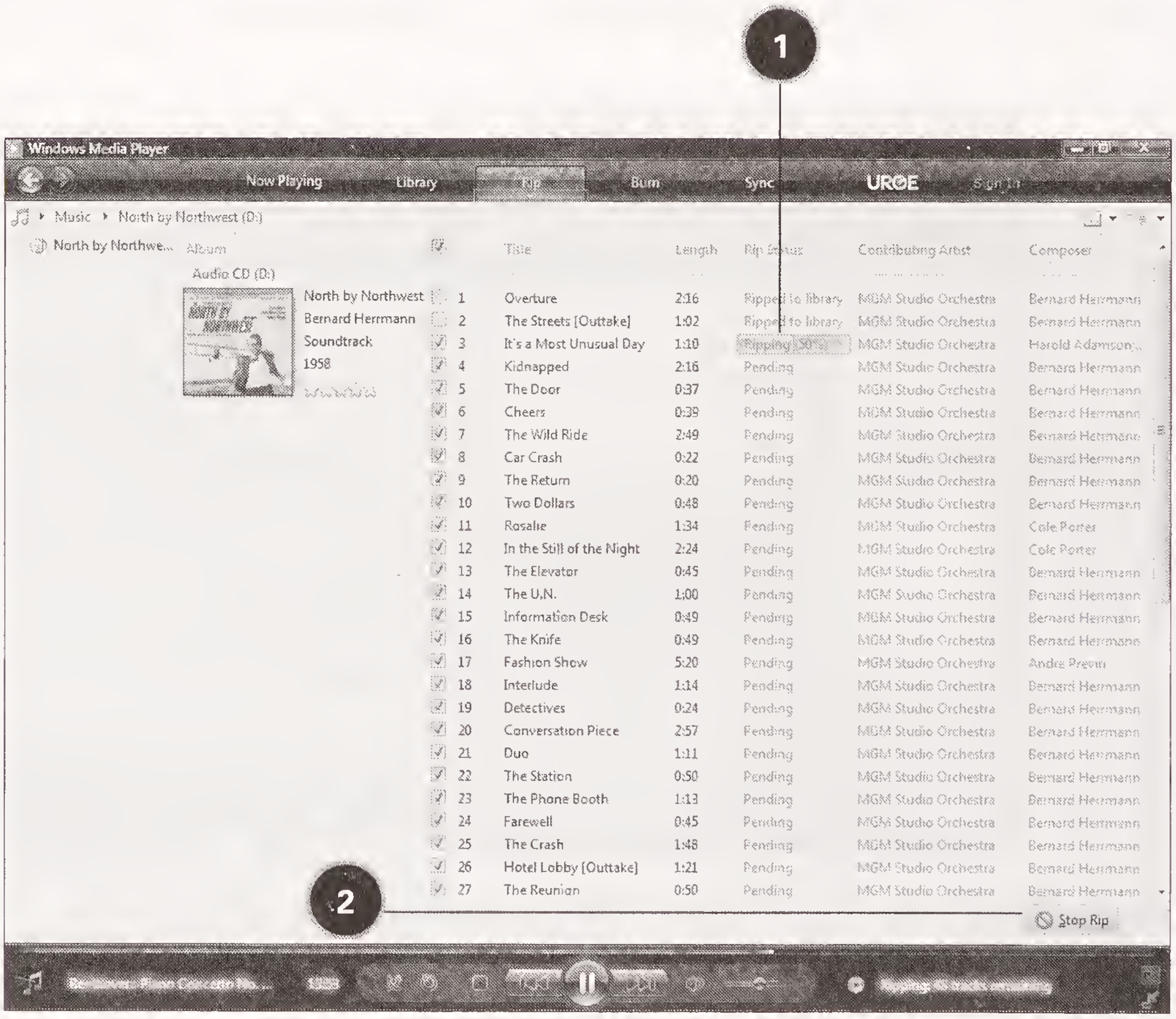
To start the ripping process with WMP 11, select Rip from the top-level menu and insert a music CD when prompted (see Figure 8.12). By default, WMP 11 starts playing and ripping the CD as soon as you insert it if you are in the Rip menu (if you're not currently playing music). To stop music playback to enable faster ripping, click the Stop button in the playback controls at the bottom of the screen. By default, WMP 11 rips all tracks of the CD using Windows Media Audio (WMA) format at 128Kbps.

Fortunately, if you don't like WMP 11's rip defaults, you can change them! You can

- Select the tracks you want to rip
- Select the digital music file format (MP3 or WMA only)
- Select the bit rate
- Specify whether to use copy protection

TIP

Enjoy your favorite pictures while WMP 11 plays your favorite music! Download the Picture Viz I or Picture Viz II visualizations. With Picture Viz I, you must specify a single folder as the picture source. Picture Viz II lets you select a folder that contains subfolders (it uses the current user's Pictures folder as the default) and features new and improved animation transitions. Both support JPEG, BMP, PNG, TIFF, EXIF, and TGA image formats.



North by Northwest
Bernard Herrmann
Soundtrack
1958

☑		Title	Length	Rip Status	Contributing Artist	Composer
☐	1	Overture	2:16	Ripped to library	MGM Studio Orchestra	Bernard Herrmann
☐	2	The Streets [Outtake]	1:02	Ripped to library	MGM Studio Orchestra	Bernard Herrmann
☑	3	It's a Most Unusual Day	1:10	Ripping (50%)	MGM Studio Orchestra	Harold Adamson;...
☑	4	Kidnapped	2:16	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	5	The Door	0:37	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	6	Cheers	0:39	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	7	The Wild Ride	2:49	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	8	Car Crash	0:22	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	9	The Return	0:20	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	10	Two Dollars	0:48	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	11	Rosalie	1:34	Pending	MGM Studio Orchestra	Cole Porter
☑	12	In the Still of the Night	2:24	Pending	MGM Studio Orchestra	Cole Porter
☑	13	The Elevator	0:45	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	14	The U.N.	1:00	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	15	Information Desk	0:49	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	16	The Knife	0:49	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	17	Fashion Show	5:20	Pending	MGM Studio Orchestra	Andre Previn
☑	18	Interlude	1:14	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	19	Detectives	0:24	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	20	Conversation Piece	2:57	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	21	Duo	1:11	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	22	The Station	0:50	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	23	The Phone Booth	1:13	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	24	Farewell	0:45	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	25	The Crash	1:48	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	26	Hotel Lobby [Outtake]	1:21	Pending	MGM Studio Orchestra	Bernard Herrmann
☑	27	The Reunion	0:50	Pending	MGM Studio Orchestra	Bernard Herrmann

① Ripping progress bar

② Toggles ripping start/stop

Figure 8.12

Ripping a movie soundtrack album with WMP 11.

To prevent a track from being ripped, clear the check box next to the track. If you only want to rip a few tracks from the album, clear the check box above the track names and then check each track you do want to rip separately. Click Start Rip to convert all tracks into the current format and bit rate.

NOTE

There's absolutely no reason to enable copy protection when you rip CDs to any of the WMA formats. None—zero—zip—nada.

Open the Rip menu to select format and bit rate. Click More Options to open the Rip Options menu.

➪ For more information about formats and bit rates, see "Table 8.1 WMP 11's Recording Formats," p. 186, this chapter.

To select a bit rate for the current rip session, click Bit Rate from the Rip pull-down menu and choose the desired bit rate from the menu. The Rip pull-down menu also provides selections for ripping a CD as soon as it's inserted and ejecting a CD after it has been ripped.

Jens Adrian has a great comparison of different audio formats and bit rates in his Compare Digital Audio Formats article, available at http://www.litexmedia.com/article/.

Better Ripping with Exact Audio Copy

Although WMP 11 does an acceptable job of ripping music from scratch-free CDs, it's not designed to handle problems caused by scratched or dirty CDs or pops and other noise in analog music sources (including CDs created from old analog recordings). And, you can't choose what encoder to use. If you're looking for a better way to convert your CD and LP collections into digital format, make sure you give Exact Audio Copy (EAC) a try. EAC is a freeware program available from http://www.exactaudiocopy.de/. EAC is designed to handle problems caused by less-than-perfect music CDs. It provides a huge number of extraction options, includes track editing and noise and pop removal, and can use a wide variety of encoders (which are not included in the EAC download). EAC is powerful, but complex, with advanced configuration requiring knowledge of using a command-line. DOS fans may cheer, but there's help for the rest of us.

To learn more about EAC, including where to find wizards to make using it easier, recommended command-line options, and sources for the recommended encoders, see The Coaster Factory's Exact Audio Copy Quickstart manual at http://users.pandora.be/satcp/eac-qs-en.htm and the Exact Audio Copy Guide from http://www.teqnilogik.com/tutorials/eac.htm.

👍 *Feature Rating:* ***Audio Ripping***

NOTE

The accuracy of the results you get from the Find Album Info feature really depends on having at least an accurate track title. It also helps to have the artist or album in place.

TIP

Don't assume that the album information stored in the Windows Media database is correct. Musical genres, track information, and album art can be missing or just plain wrong.

Retrieving and Editing CD Information

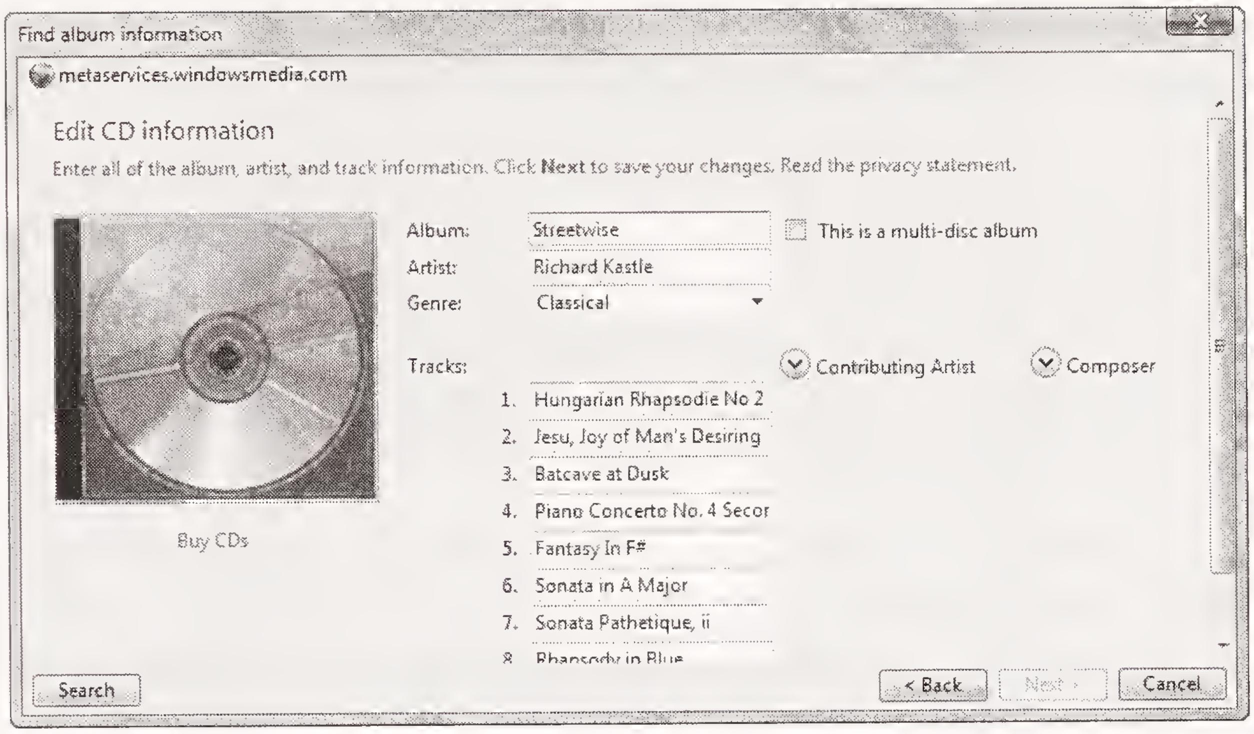
You can edit "tag" information for a music CD before or after you rip it. This information can be as basic as artist, album title, and track title, or it can be as expansive as the release year, genre, composer, and much more (how much of a fanatic *are* you about your music?). Whether you intend to rip a handful of tracks or a virtual mountain of them, there's no reason not to take advantage of the track tagging feature to make sure that track information is complete and correct. By reviewing and editing track and album information, you help organize your music collection and make it easier to find the music that matches the mood.

Before editing incomplete or incorrect information, right-click any track and select Find Album Info. An Album Info dialog appears that attempts to match what it knows about your selected track (from its tag information) to its own online music database.

If Media Player has enough to work with, it's likely to come up with a short list of potential albums that includes the one for your track. If you find a match, simply select it and click Finish. Media Player will apply all known information about that album and its tracks to your music files, including the album's cover art (if it's available).

If you can't come up with an exact match, however, click the Edit button from the Album Info dialog to add or correct the album information (see Figure 8.13). This information is shared, by default, with WindowsMedia.com so that future searches for this album (by you or other users) will generate a match. When you're finished adding information about the track or album, click Finish to send the information to WindowsMedia.com and apply it to the track tags for your music files.

Tag information you have stored for your individual music tracks may not be complete or accurate, especially for older albums. To view or edit tag information, right-click the track and select Advanced Tag Editor. This opens the Track Info tab shown in Figure 8.14 A.



Edit CD information

Enter all of the album, artist, and track information. Click **Next** to save your changes. Read the privacy statement.

Album: Streetwise

☐ This is a multi-disc album

Artist: Richard Kastle

Genre: Classical

Tracks:

1. Hungarian Rhapsodie No 2
2. Jesu, Joy of Man's Desiring
3. Batcave at Dusk
4. Piano Concerto No. 4 Secor
5. Fantasy In F#
6. Sonata in A Major
7. Sonata Pathetique, ii
8. Rhapsody in Blue

Figure 8.13

Editing genre and track information before ripping the album.

Making Your Own Album Art

If the album art for your CD is incorrect or missing, download or scan the album art. Reduce it to a size of about 200×200 pixels and save it in one of the following formats:

- JPEG (.jpg)
- TIFF (.tif)
- Windows Bitmap (.bmp)
- PNG (.png)
- GIF (.gif)

View the image file in Vista's Photo Gallery Viewer, right-click it, and select Copy.

In WMP 11, select a view that shows album art. Right-click the album art or placeholder icon you want to change and select Paste Album Art.

Use the Track Info dialog to edit the album title, select the correct genre, select a mood (mainly useful for Pop/Rock/Jazz music), specify the beats per minute, key, and other information useful for serious (a.k.a. obsessive) music aficionados.

Click the Artist Info tab to edit artist, lyricist, composer, conductor, and other information about the track (see Figure 8.14 B).

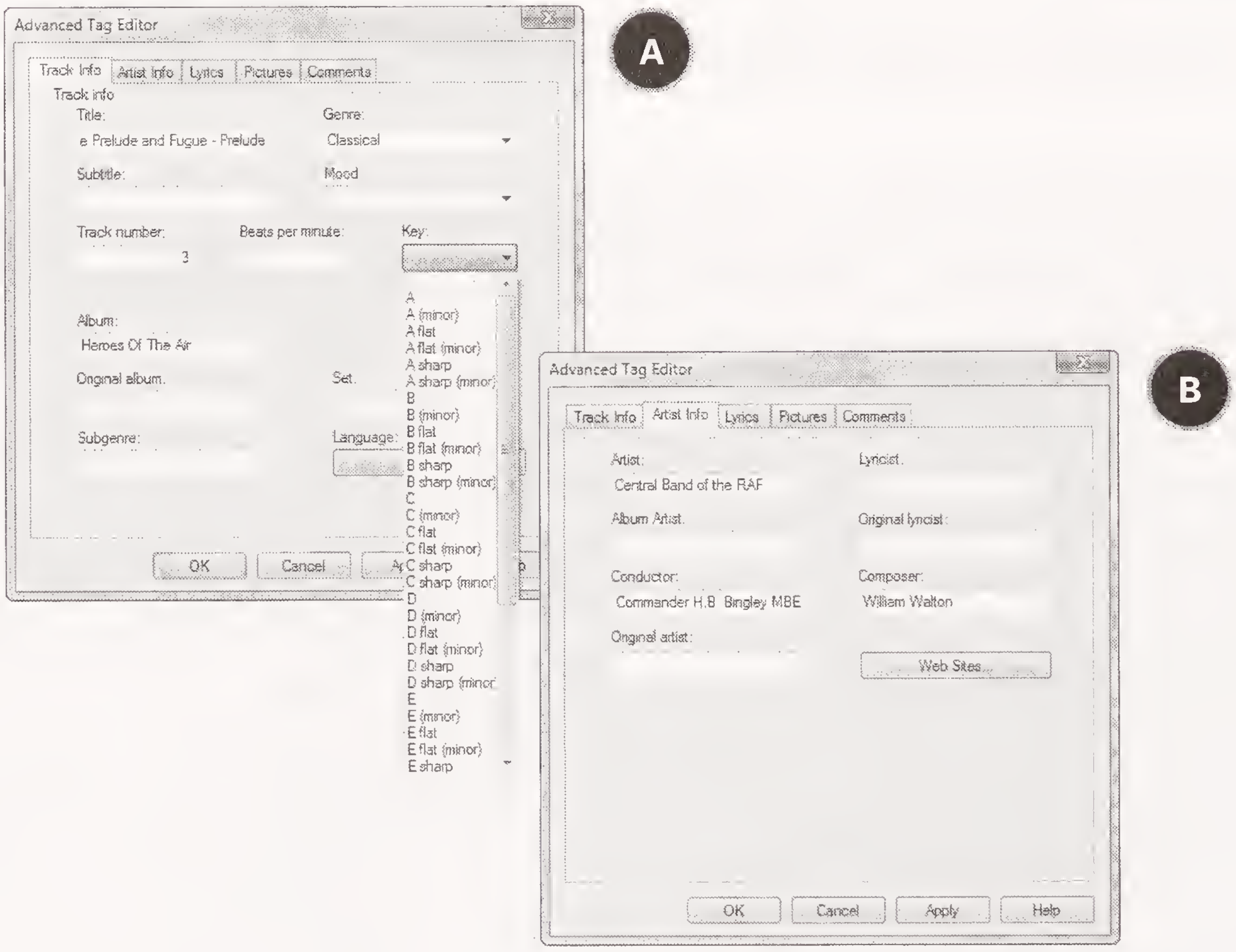
TIP

You can use the Advanced Tag Editor to edit a track while you're playing it. Use this feature to make it easier to determine the mood of a piece.

Click the Web Sites button to add or edit URLs for the audio file, artist, audio source, and other useful sites.

Click the Lyrics tab to add lyric text to a track. The lyrics can be displayed during playback. If you want to synchronize the lyrics to the music, click the Synchronized Lyrics button to open a special editing dialog. Use the sliders on the musical timeline and the Play/Stop toggle button to synchronize the lyrics to the music. Click OK when finished.

To see the lyrics while you play the music, press Alt, open the Play menu, select Lyrics, Captions and Subtitles, and select the language and style desired. Media Player then displays the lyrics in the Now Playing view.


A
Advanced Tag Editor
Track Info
Artist Info
Lyrics
Pictures
Comments
Track info
Subtitle:
Mood
Beats per minute:
Key:
A
A (minor)
A flat
A flat (minor)
A sharp
A sharp (minor)
B
B (minor)
B flat
B flat (minor)
B sharp
B sharp (minor)
C
C (minor)
C flat
C flat (minor)
C sharp
C sharp (minor)
D
D (minor)
D flat
D flat (minor)
D sharp
D sharp (minor)
E
E (minor)
E flat
E flat (minor)
E sharp
Original album:
Set:
Subgenre:
Language:
OK
Cancel
B
Advanced Tag Editor
Track Info
Artist Info
Lyrics
Pictures
Comments
Lyricist:
Album Artist:
Original lyricist:
Original artist:
Web Sites...
OK
Cancel
Apply
Help

Title: e Prelude and Fugue - Prelude

Genre: Classical

Track number: 3

Album: Heroes Of The Air

Artist: Central Band of the RAF

Conductor: Commander H.B Bingley MBE

Composer: William Walton

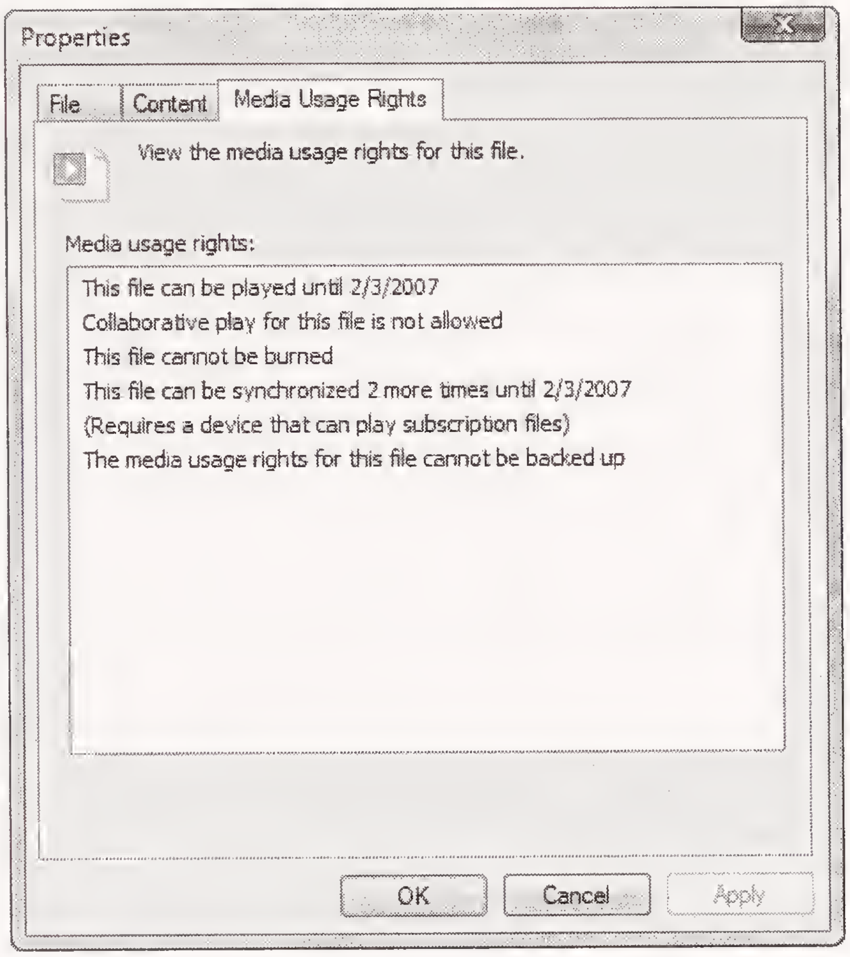
A Editing track info with the Advanced Tag Editor

B Editing artist and composer information

Figure 8.14

Using the Advanced Tag Editor to edit information about the truck.

You can also open a track's properties sheet to see the information stored for it, select Properties from the right-click menu. This opens a three-tab properties sheet. The default, is the File tab, which lists baseline track information such as length, bit rate, media type, and so on. For artist, title, album, and other information, click the Content tab. The third tab, Media Usage Rights, is blank if you ripped your own albums and did not copy-protect them. If you copy-protected the songs you rip or if you purchased digital rights managed (DRM) media online, such as downloads from an online music store, this tab displays media usage information (see Figure 8.15).



View the media usage rights for this file.

Media usage rights:

This file can be played until 2/3/2007
Collaborative play for this file is not allowed
This file cannot be burned
This file can be synchronized 2 more times until 2/3/2007
(Requires a device that can play subscription files)
The media usage rights for this file cannot be backed up

Figure 8.15

The Media Usage Rights for a song downloaded from the URGE music store during a free trial.

DRM and Digital Music Downloads

Digital rights management (DRM) is designed to prevent the unauthorized copying of digital content, primarily digital music. When you "purchase" a song from a digital music store, you are actually purchasing a license to use that music in ways authorized by the vendor. For example, music purchased from the Wal-Mart music service (http://musicdownloads.walmart.com) has the following features:

- Music is stored using the 128-bit WMA (Windows Media Audio) format secured with DRM.
- Music can be downloaded to a single computer.
- The music and the backup licenses can be transferred to up to two additional computers, enabling up to three computers to play the music.
- Music may be burned to a CD up to ten times.
- You can export music an unlimited number of times to a portable player that supports WMA format.

Other music stores have somewhat similar license terms (check out the FAQs or Help files before you buy digital music to find out what the rules are for any particular online music store). If you download music through a subscription service or during a free trial of a music store, additional restrictions on usage may apply (see Figure 8.15 for a typical example).

DRM's job is to make sure that the usage limitations in the license you purchase for digital music are enforced. For example, if you transfer a DRM-protected song to more computers than you're permitted, the song just uses up space on the second computer's hard disk—it won't play.

How can you avoid DRM hassles, legally (and ethically)? Rip your own CDs! It doesn't take long with today's high-speed rewritable DVD drives, and the music you rip yourself has no DRM strings attached to it. More importantly to many, there are also quality advantages to creating your own digital music collection, too, especially if you have a good home theater setup: the music you purchase from an online store is often ripped at bitrate settings that may be acceptable for playback on a portable player, but won't sound as good as your rips will when you create them at a higher bitrate.

Creating Playlists

Whether you want to turn your PC into the 21st-century equivalent of a stereo with a stack of LPs or preparing to populate your portable media player with this week's favorite songs, playlists are how you'll do it. You can start the playlist creation process in any of the following ways:

- Create a blank playlist—Click Library, Create Playlist. The newly created playlist is, of course, blank. To fill it in, drag songs, individually or in selected groups, to the Playlist pane.
- Play Favorites—This option creates a playlist of songs with a rating of 3-stars or higher. Select a category from your music library (from the Navigation pane) and click the Play Favorites link that appears in the List pane.
- Create an Auto Playlist—Click Library, Create Auto Playlist. In the New Auto Playlist dialog, you can create a playlist that includes both music and other media on your system. Click the plus (+) sign next to Music In My Library to get started.

  In the first set of criteria, you can select by album, artist, bit rating, various date-related settings, ratings, how often the music has been played, and others. Supply additional information as prompted. Add criteria as needed to select just the media you want.

TIP

If the Playlist pane isn't visible in WMP 11, click the left arrow next to the Search box at the upper-right corner of the WMP display.

Use the And Also Include feature to include other types of media, including pictures, TV shows, and videos to your playlist. You can select additional criteria customized for each type of media.

Use the Apply the Following Restrictions feature to limit the total size of your playlist by number of items, duration, or total size. Figure 8.16 shows a typical auto playlist that includes music, video, and picture elements. When you click OK, the playlist is stored, starts playing, and is listed in the center pane of WMP.

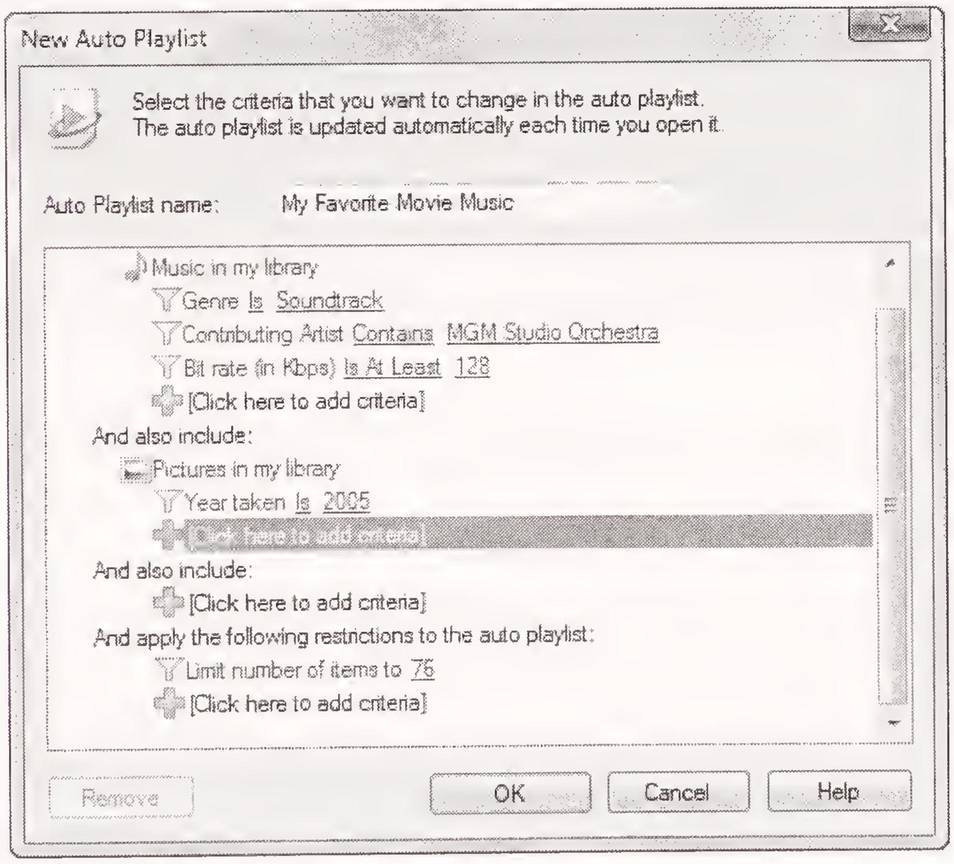
After you create a playlist, you can enjoy it on your computer or transfer it to a portable media player.

To save your playlist for reuse, click Save Playlist and provide a name when prompted. Your new playlist appears in the Playlists section of the left pane in WMP. To open an existing playlist, double-click it and it appears in the central pane. To edit a playlist, double-click it and click the Edit link in the playlist pane (see Figure 8.17).

To clear the contents of your current playlist, click the X next to the playlist. To remove an individual song or move it up or down in the playlist, right-click the song and select an action from the context menu that appears.

TIP

To grab an entire album for your playlist, click the album name in Songs or Album views and drag it to the Playlist pane. To create a playlist of your favorite group or artist, select the Artist view and drag the artist to the Playlist pane. To create a genre playlist, select Genre view and drag your favorite genre to the Playlist pane. To create a "greatest hits of the decade" or "top hits of the year" playlist, select Year view and drag the decade or the year to the Playlist pane.



Select the criteria that you want to change in the auto playlist.
The auto playlist is updated automatically each time you open it.

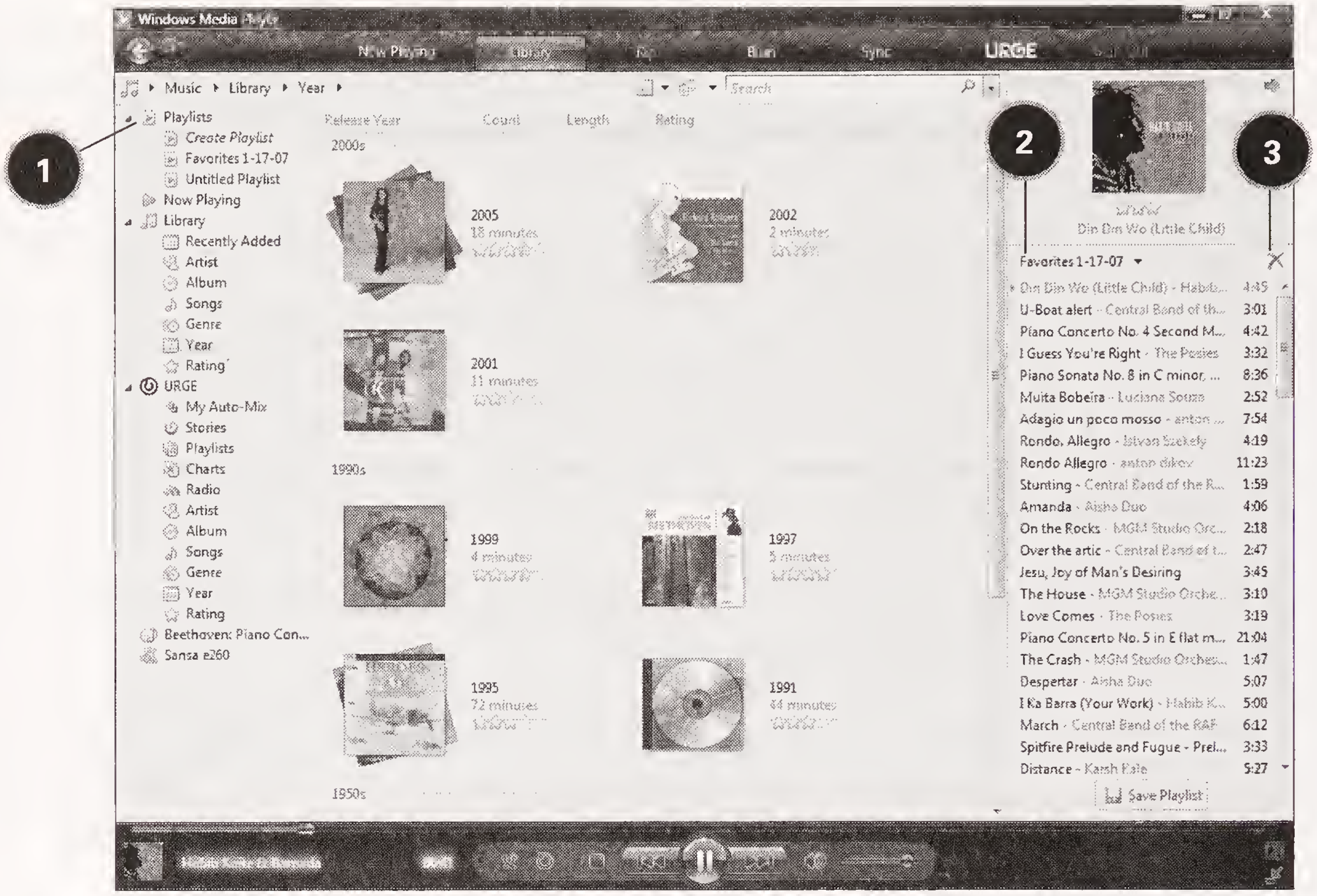
Auto Playlist name: My Favorite Movie Music

Music in my library
Genre Is Soundtrack
Contributing Artist Contains MGM Studio Orchestra
Bit rate (in Kbps) Is At Least 128
[Click here to add criteria]
And also include:
Pictures in my library
Year taken Is 2005
[Click here to add criteria]
And also include:
[Click here to add criteria]
And apply the following restrictions to the auto playlist:
Limit number of items to 75
[Click here to add criteria]

Figure 8.16

Working with auto playlists.

1. Playlists in left pane
2. Click to edit current playlist
3. Clear playlist contents


Windows Media Player
Now Playing
Library
Rip
Burn
Sync
URGE
Music ▸ Library ▸ Year ▸
Search
Playlists
Create Playlist
Favorites 1-17-07
Untitled Playlist
Now Playing
Library
Recently Added
Artist
Album
Songs
Genre
Year
Rating
URGE
My Auto-Mix
Stories
Playlists
Charts
Radio
Artist
Album
Songs
Genre
Year
Rating
Beethoven: Piano Con...
Sansa e260
Release Year
Count
Length
Rating
2000s
2005
18 minutes
2002
2 minutes
2001
11 minutes
1990s
1999
4 minutes
1997
5 minutes
1995
72 minutes
1991
44 minutes
1950s
Din Din Wo (Little Child)
Save Playlist
1
2
3

Favorites 1-17-07

Din Din Wo (Little Child) - Habib...	4:45
U-Boat alert - Central Band of th...	3:01
Piano Concerto No. 4 Second M...	4:42
I Guess You're Right - The Posies	3:32
Piano Sonata No. 8 in C minor, ...	8:36
Muita Bobeira - Luciana Souza	2:52
Adagio un poco mosso - anton ...	7:54
Rondo, Allegro - Istvan Szekely	4:19
Rondo Allegro - anton dikov	11:23
Stunting - Central Band of the R...	1:59
Amanda - Aisha Duo	4:06
On the Rocks - MGM Studio Orc...	2:18
Over the artic - Central Band of t...	2:47
Jesu, Joy of Man's Desiring	3:45
The House - MGM Studio Orche...	3:10
Love Comes - The Posies	3:19
Piano Concerto No. 5 in E flat m...	21:04
The Crash - MGM Studio Orches...	1:47
Despertar - Aisha Duo	5:07
I Ka Barra (Your Work) - Habib K...	5:00
March - Central Band of the RAF	6:12
Spitfire Prelude and Fugue - Prel...	3:33
Distance - Karsh Kale	5:27

Figure 8.17

Retrieving and playing a playlist from the Playlists section of the left pane

Portable Media Player Support

With so many digital music and video players on the market, and no shortage of downloadable music services, it can be confusing when it's time to select a player or service. Microsoft takes the guesswork out of selecting players for use with Windows Media Player. As long as the player is on the Plays for Sure list available at http://www.playsforsure.com/FindPortableDevices.aspx or its package includes the Windows Media Playsforsure logo, it works with WMP.

TIP

Wondering what music services work with Plays for Sure? Go to www.playsforsure.com to find music stores, services, and devices that work together with each other and with Windows Media Player.

What's Up with Microsoft Zune?

The new Microsoft Zune digital media player brings a confusing combination of advanced features and annoying limitations to the digital music world.

On the plus side, Zune (available in several colors!) features:

- Support for video, pictures, and music
- 3-inch color LCD working in portrait or landscape mode
- 30GB storage
- Integrated FM tuner (never miss "All Things Considered" again!)
- Wireless Zune-to-Zune sharing
- Integrated 802.11b/g Wi-Fi wireless Ethernet
- Magnetic earphones that automatically pause the unit when they're disconnected (Steve Jobs, call your office!)
- Automatic monitoring of specified folders for new and changed content
- Imports non-DRM content from Windows Media Player and iTunes, including WMA, MP3, AAC music; JPEG photos; WMV natively, MPEG-4 and H.264 video via conversion

However, Zune does *not* work with DRM-enabled music from any source other than the Zune Marketplace. In other words, Plays for Sure doesn't apply to Zune, even though both are from Microsoft! And, it doesn't work with WAV or WMA Lossless file formats either (so much for maximum audio quality fans).

Zune may (repeat, *may*) make sense for digital media newbies and for those who have digital media collections ripped from CDs they own. However, the inability of Zune to work with music purchased from third-party music stores makes it useless for anyone with a large collection of purchased tracks—unless you like buying the same music twice!

Learn more about Zune at Microsoft's official Zune website, http://www.zune.net.

Managing and Transferring Media to Your Portable Player

When you connect a supported portable media player to your PC for the first time, Vista displays an AutoPlay message from which you can click Play Using Windows Media Player to, from this point forward, automatically play the media already transferred to the player as soon as it's connected to your Vista PC.

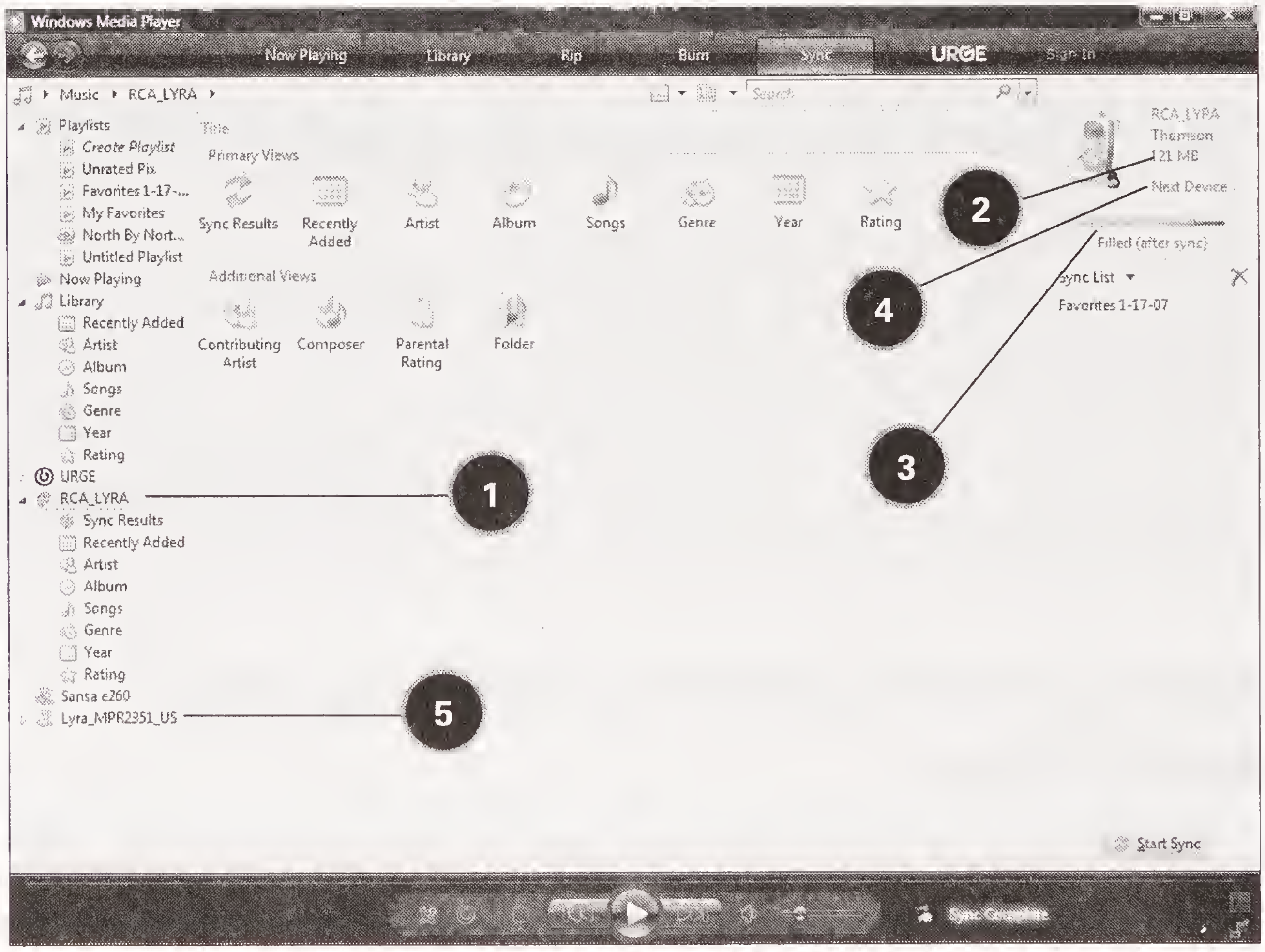
WARNING

WMP 11 may recognize a flash memory storage device as a portable media device. You may see a prompt asking you whether you want to clear the contents of your device to make room for new media. Unless you have a burning desire to lose all your data on the device, answer No to this question.

If you want to automatically play the media on the player when you insert it, click the Always Do This... check box before clicking Play. If you want to transfer media to or from the player, close the AutoPlay dialog and start WMP 11 manually.

After you start WMP 11 and connect a portable media player, you may see a Windows Media Player–Device Setup dialog. Click the Sync This Device Automatically if you want to automatically synchronize the device with the playlists in the right pane. Use the Add button to move playlists to the Playlists to Sync pane on the right or the Remove button to move playlists to the Available Playlists pane on the left. Click Finish when you're done.

After starting WMP 11, select the portable media device from the left menu. If it already contains media, you will see a view appropriate to the media type. In the upper-right corner, a dialog displays the total capacity of the device and the amount of space remaining (see Figure 8.18). If part of the capacity bar turns red, as in Figure 8.18, the playlist is larger than the device's capacity.


Windows Media Player
Now Playing
Library
Rip
Burn
Sync
URGE
Sign In
Music ▸ RCA_LYRA ▸
Search
Playlists
Create Playlist
Unrated Pix
Favorites 1-17-...
My Favorites
North By Nort...
Untitled Playlist
Now Playing
Library
Recently Added
Artist
Album
Songs
Genre
Year
Rating
URGE
RCA_LYRA
Sync Results
Recently Added
Artist
Album
Songs
Genre
Year
Rating
Sansa e260
Lyra_MPR2351_US
Title
Primary Views
Sync Results
Recently Added
Artist
Album
Songs
Genre
Year
Rating
Additional Views
Contributing Artist
Composer
Parental Rating
Folder
RCA_LYRA
Thomson
121 MB
Next Device
Filled (after sync)
Sync List
Favorites 1-17-07
Start Sync
Sync Complete
1
2
3
4
5

1. Selected media player
2. Current capacity
3. Remaining space
4. Switches to next portable device
5. Next portable device

Figure 8.18

Preparing to synchronize media with an RCA Lyra portable media player.

If your portable player doesn't have any room for new content or doesn't have enough room for the entire playlist (as in Figure 8.18), you can shuffle music to the player (wiping out its current contents), or manually delete music on the player to make room for new content while keeping your favorite tracks around for another day. During the synchronization process, each track in the sync list is displayed in the Sync Results view, along with its status.

To dump unwanted content from your portable player, select the portable player, open the appropriate view, select the content you want to delete, and press the Del key on your keyboard. When prompted to confirm, click Yes.

Manual File Synchronization

To synchronize content from WMP 11 to your portable player, you can manually drag songs, albums, or playlists to the Sync List pane at the right (refer to Figure 8.18), or click the shuffle music link. To synchronize manually, make sure the player is selected, open the appropriate view, select the items, and drag them to the Sync List. When you're ready, click Start Sync to complete the transfer.

During the transfer process, Media Player displays a list of tracks to be transferred, along with an animated progress bar for each track so that you can keep track of what's been transferred and what's left to do. At the end of the process, the Status column should list each file as Synchronized to Device. The Playlist column indicates the playlist(s) you selected. If you selected individual songs or albums not in a playlist, the Playlist column lists Files You Added for those items.

Shuffling Music to Your Player

The process of synchronizing the contents of your portable player can be run in two ways: manual or automatic (also known as *shuffling*). Shuffling automatically transfers media from a playlist to your player. If you aren't shuffling a specific playlist to your portable player, you can click the Click Here link in the Sync List pane (which replaces the Playlist pane on the right side of the WMP interface.

To start the process, click Shuffle Now. This option automatically replaces the media on your player with the media in the Shuffle list. The status dialog above the Sync List shows how much space remains on your player. If the capacity bar turns red, your

TIP

If you're working with a lot of playlists and a device that's not big enough to handle them all, click the Shuffle What Syncs check box shown. WMP 11 will take care of the details for you.

TIP

If your flash-memory player has been upgraded with a flash memory card, the card may be displayed as a separate drive letter in WMP 11 and in My Computer. Click Next Device (refer to Figure 8.18) or select the drive letter corresponding to the additional memory device, then click Start Sync to synchronize files.

TIP

To delete an entire album's tracks at one time from your portable player, right-click the album title and select Delete.

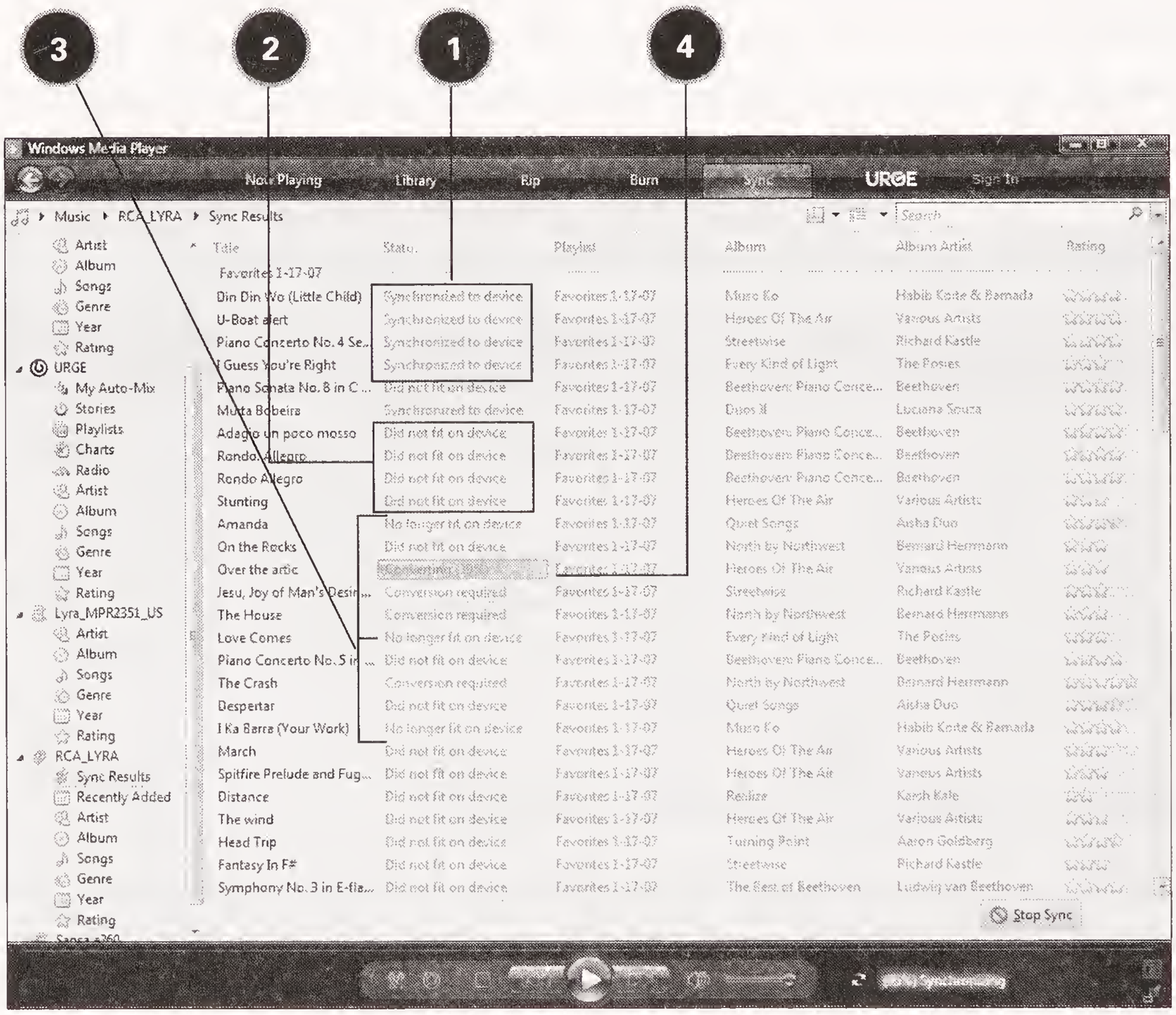
TIP

If the Sync List or other list items aren't visible, click the Layout options menu and select Show List Pane.

Sync List is too large for the remaining capacity of your player (see Figure 8.18).

When you click Shuffle Now, you may be asked to click Yes to continue. If you're not absolutely sure that the music on your device is backed up elsewhere, click No. During the process, the music on your player is deleted to make room for new music.

A progress bar appears as the previous contents of your player are deleted. Then a dialog listing all the tracks in the shuffle list appears, and as each track is transferred the status changes (see Figure 8.19). When there is no more room on the device, the Shuffle process stops, listing the files that were transferred as well as those that were not.



Favorites 1-17-07

Title	Status	Playlist	Album	Album Artist
Din Din Wo (Little Child)	Synchronized to device	Favorites 1-17-07	Muso Ko	Habib Koite & Bamada
U-Boat alert	Synchronized to device	Favorites 1-17-07	Heroes Of The Air	Various Artists
Piano Concerto No. 4 Se...	Synchronized to device	Favorites 1-17-07	Streetwise	Richard Kastle
I Guess You're Right	Synchronized to device	Favorites 1-17-07	Every Kind of Light	The Posies
Piano Sonata No. 8 in C ...	Did not fit on device	Favorites 1-17-07	Beethoven: Piano Conce...	Beethoven
Muita Bobeira	Synchronized to device	Favorites 1-17-07	Duos II	Luciana Souza
Adagio un poco mosso	Did not fit on device	Favorites 1-17-07	Beethoven: Piano Conce...	Beethoven
Rondo. Allegro	Did not fit on device	Favorites 1-17-07	Beethoven: Piano Conce...	Beethoven
Rondo Allegro	Did not fit on device	Favorites 1-17-07	Beethoven: Piano Conce...	Beethoven
Stunting	Did not fit on device	Favorites 1-17-07	Heroes Of The Air	Various Artists
Amanda	No longer fit on device	Favorites 1-17-07	Quiet Songs	Aisha Duo
On the Rocks	Did not fit on device	Favorites 1-17-07	North by Northwest	Bernard Herrmann
Over the artic	Converting [illegible]	Favorites 1-17-07	Heroes Of The Air	Various Artists
Jesu, Joy of Man's Desir...	Conversion required	Favorites 1-17-07	Streetwise	Richard Kastle
The House	Conversion required	Favorites 1-17-07	North by Northwest	Bernard Herrmann
Love Comes	No longer fit on device	Favorites 1-17-07	Every Kind of Light	The Posies
Piano Concerto No. 5 in ...	Did not fit on device	Favorites 1-17-07	Beethoven: Piano Conce...	Beethoven
The Crash	Conversion required	Favorites 1-17-07	North by Northwest	Bernard Herrmann
Despertar	Did not fit on device	Favorites 1-17-07	Quiet Songs	Aisha Duo
I Ka Barra (Your Work)	No longer fit on device	Favorites 1-17-07	Muso Ko	Habib Koite & Bamada
March	Did not fit on device	Favorites 1-17-07	Heroes Of The Air	Various Artists
Spitfire Prelude and Fug...	Did not fit on device	Favorites 1-17-07	Heroes Of The Air	Various Artists
Distance	Did not fit on device	Favorites 1-17-07	Realize	Karsh Kale
The wind	Did not fit on device	Favorites 1-17-07	Heroes Of The Air	Various Artists
Head Trip	Did not fit on device	Favorites 1-17-07	Turning Point	Aaron Goldberg
Fantasy In F#	Did not fit on device	Favorites 1-17-07	Streetwise	Richard Kastle
Symphony No. 3 in E-fla...	Did not fit on device	Favorites 1-17-07	The Best of Beethoven	Ludwig van Beethoven

① Tracks that were successfully shuffled to the portable device

② Tracks that didn't fit

③ Tracks removed from device

④ File being converted during shuffle to device

Figure 8.19

Shuffle lives up to its name, randomly copying songs from different albums in no particular order to your player.

If you prefer automatic synchronization but want to select specific criteria, right-click the icon for your portable player and select Set Up Sync.... Use the Device Setup dialog to select options for automatically synchronizing the device and selecting playlists to automatically synchronize, based on music ratings, frequency of play, and other criteria.

Automatic synchronization is enabled if the Sync This Device Automatically check box is enabled. The Available Playlists pane contains playlists you can select for synchronization. By default, playlists in My Playlists are selected. You can also select Sync Playlists from the pull-down menu for this pane.

Use the Priority arrows to move the selected criterion higher or lower in the list. Click the Shuffle What Syncs check box to randomize music. Use the Add button to move selected items from My Playlist or other playlists to the Playlists to Sync category. Use the Remove button to remove a criterion or playlist from the dialog.

If you're not satisfied with WMP 11's default automatic sync criteria, build your own. To create a new automatic playlist, click the New Auto Playlist button and specify a name, criteria, and restrictions, such as limiting the playlist to the capacity of your player. Don't forget to enter a better name than Untitled Auto Playlist. Click OK when you're finished.

To configure advanced auto synchronization options for your portable media player, right-click its icon and select Advanced Options. This opens the Sync tab of the properties sheet for your player.

The Sync tab, shown in Figure 8.20 A, has options for starting synchronization automatically, setting up folders, and reserving space for other programs.

Click the Quality (see Figure 8.20 B) tab to adjust the quality levels for music, video, and TV shows when transferred to your player. By default, the greatest compression level (smallest size) is selected for both types of media, and media recorded at a higher quality is converted automatically during the transfer process. The default is suitable for use with small flash-based players, but if you're using a hard disk-based player with plenty of space, you may prefer to click the Select Maximum Quality Level radio button for each type of media supported by your player and use the slider to adjust the quality level.

WARNING

Using Shuffle is easy, but it doesn't give you a lot of control over what is copied to your portable device. If you're album-oriented, rather than song-oriented, you may see the contents of different albums mixed together, and songs from an album in a different order than on the original.

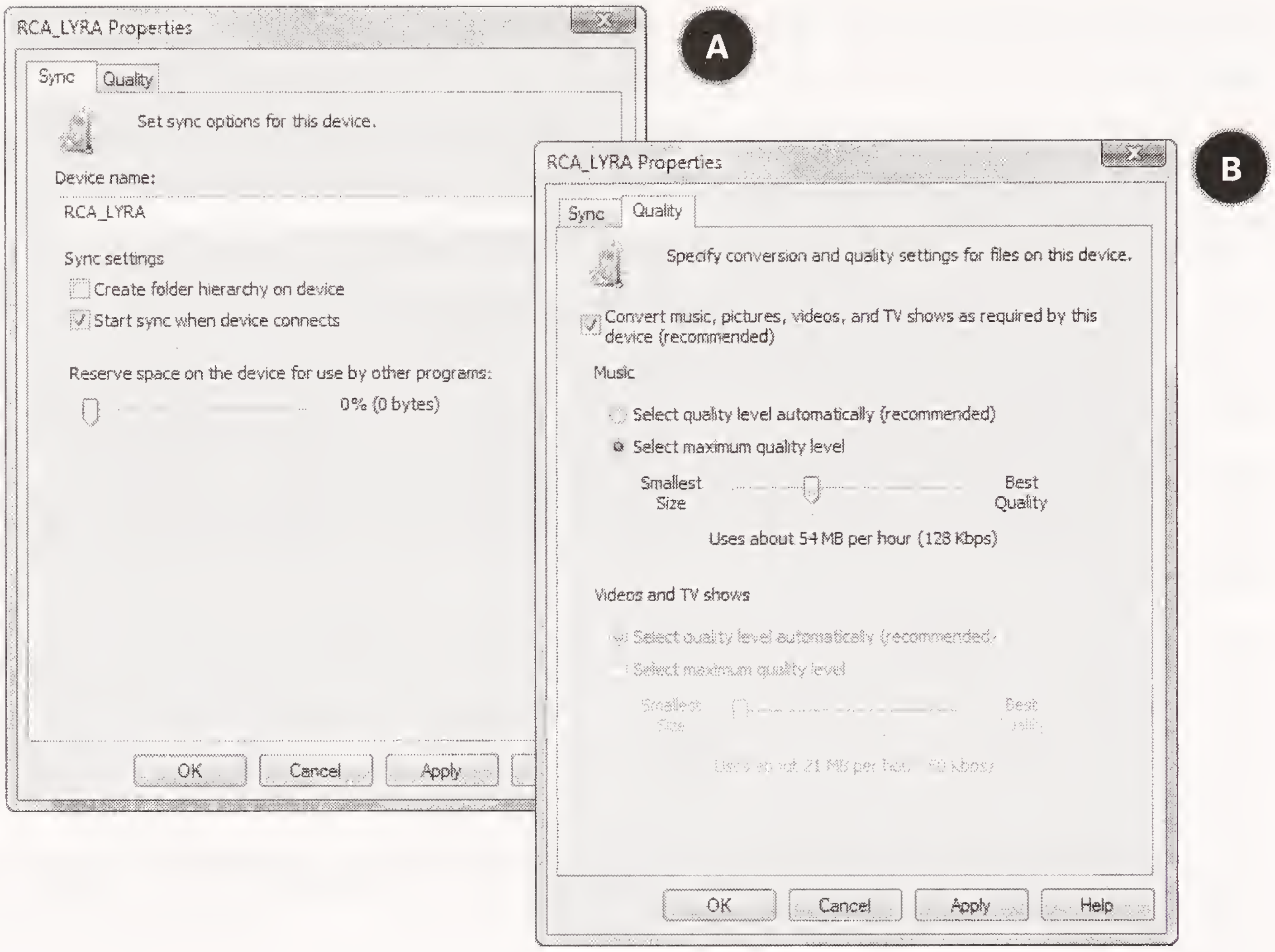
To get more control out of how Shuffle works, click the Sync List link and select options such as clear the current list, sort by various criteria (Track Title, Album, and so on), save playlist, or start the shuffle process (Shuffle List Now).

TIP

If your digital media player is assigned a drive letter by Windows and you want to save space in your player's storage for use as a removable media drive or for use by other programs, adjust the Reserve Space... slider shown in Figure 8.20 A to provide the desired amount of space for other uses.

A Advanced Sync options.

B Configuring a digital music player to use 128Kbps WMA digital audio for better audio quality than the default 64Kbps.



RCA_LYRA Properties

Set sync options for this device.

Device name:
RCA_LYRA

Sync settings
☐ Create folder hierarchy on device
☑ Start sync when device connects

Reserve space on the device for use by other programs:
0% (0 bytes)

RCA_LYRA Properties

Specify conversion and quality settings for files on this device.

☑ Convert music, pictures, videos, and TV shows as required by this device (recommended)

Music
○ Select quality level automatically (recommended)
● Select maximum quality level
Smallest Size — Best Quality
Uses about 54 MB per hour (128 Kbps)

Videos and TV shows
● Select quality level automatically (recommended)
○ Select maximum quality level
Smallest Size — Best Quality

Figure 8.20

The options available on the Quality menu reflect the media types that your player supports. If you can't select an option, the device doesn't permit you to change the quality for that option.

WARNING

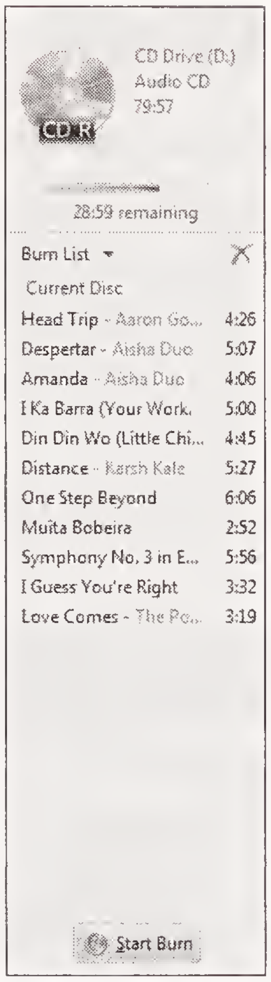
Because WMP 11 normally reduces audio and video quality during synchronization to enable you to store more content on your player, feel free to rip your media at the highest-quality settings.

Feature Rating: ***Device Synchronization***

Burning a CD or DVD

You can burn any media in your library (except for media whose DRM settings prohibit burning) to a CD or DVD. Music can be burned to an Audio CD (suitable for playback in a boombox or set-top DVD player as well as a PC) or to a Data CD or DVD. This type of disc is designed primarily for playback in a computer with the appropriate CD or DVD drive but also works in many recent DVD set-top boxes.

To start the process of making a music CD, start WMP, select Music, open the Burn tab and insert a writable CD. Then drag songs from your library into the Burn List area at the right side of WMP 11 (see Figure 8.21), or click the link to burn the current contents of the Now Playing view. Click Start Burn to start the burning process.



CD Drive (D:)
Audio CD
79:57

28:59 remaining

Current Disc

Head Trip - Aaron Go...	4:26
Despertar - Aisha Duo	5:07
Amanda - Aisha Duo	4:06
I Ka Barra (Your Work.	5:00
Din Din Wo (Little Chi...	4:45
Distance - Karsh Kale	5:27
One Step Beyond	6:06
Muita Bobeira	2:52
Symphony No. 3 in E...	5:56
I Guess You're Right	3:32
Love Comes - The Po...	3:19

Figure 8.21

Preparing to burn a music CD.

During the burn process, WMP 11 converts each song into a CD audio track. A progress bar appears for each song during the transfer progress. At the end of the process, all tracks are listed as Complete. WMP 11 finalizes the disc and ejects the media when the process is complete.

To create a CD or DVD containing MP3 or WMA tracks, click the drop-down arrow on the Burn tab and select Data CD or DVD from the Burn menu.

By default, WMP 11 ejects the disc after burning it, and uses volume leveling to adjust the volume of each track (for balance). Clear the check boxes in the Burn menu to disable these options. To change additional settings, such as how to arrange the media on the disc, or whether to convert MP3 or WMA audio to store more on a disc, click More Options to open the Burn Options dialog (refer to Figure 8.7 A, p. 188).

The burn process works similarly for other types of media. However, if you want to burn video or pictures to a CD or DVD, be sure to choose Data CD or DVD as the media type.

Feature Rating: ***Burning CDs and DVDs***

TIP

If you are burning CDs for use in older boom box or portable CD players, make sure you use a media type compatible with those devices. Older players may not be compatible with rewritable CD (CD-RW) media, and some might not work well with certain combinations of reflective layer and dye combinations on recordable CD (CD-R) media.

Playing Video in WMP 11

DVD support is the big news about WMP 11. Yes, you can finally use WMP to play your favorite DVDs without installing a third-party DVD decoder. Naturally, WMP 11 also handles other popular formats, such as Microsoft's native WMV format, the popular AVI format, and movies created with Windows Movie Maker. To work with video in WMP 11, select Video from the media types menu in Library view.

Figure 8.22 illustrates the All Video view of the Video Library.

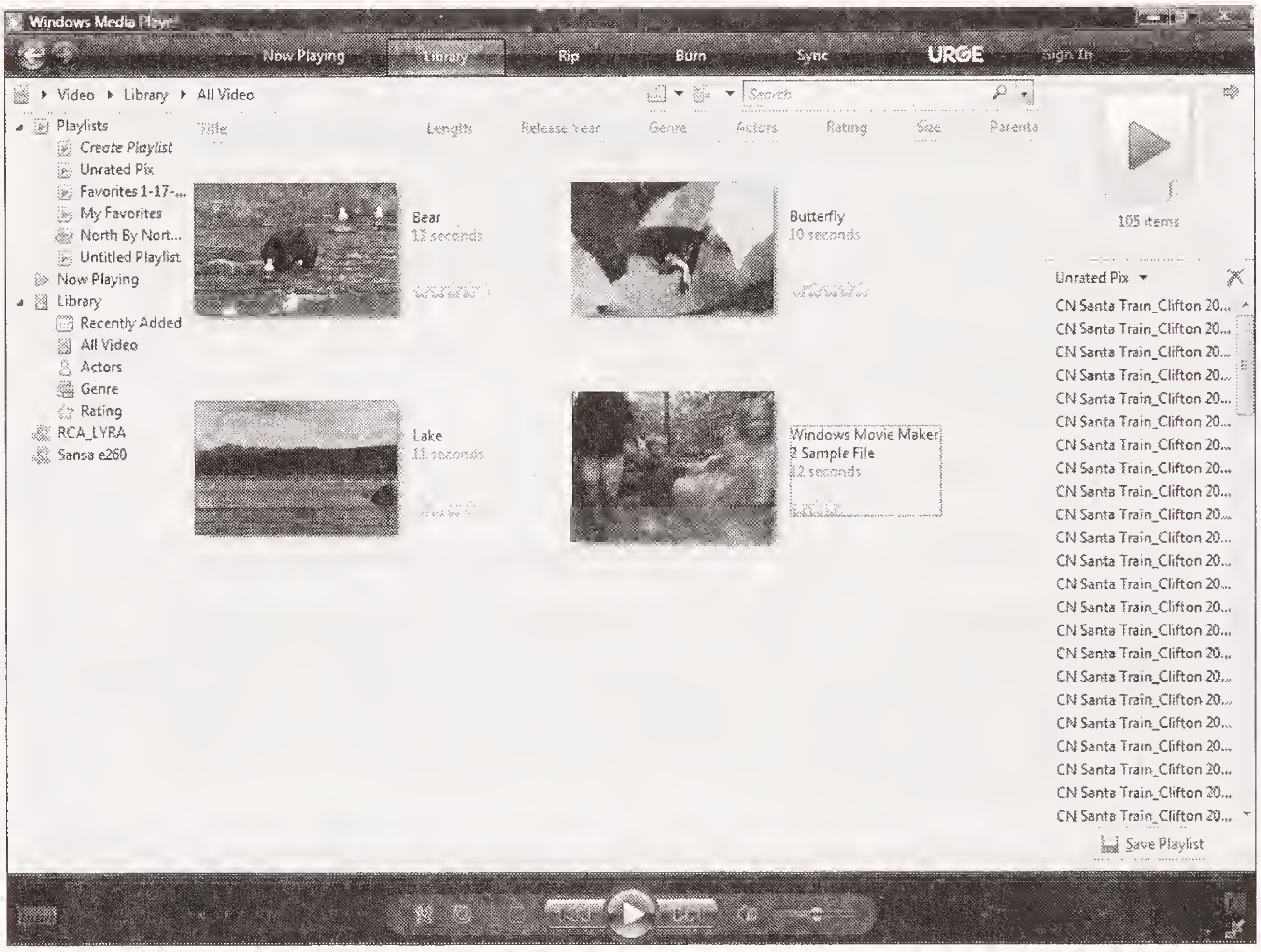

Windows Media Player
Now Playing
Library
Rip
Burn
Sync
URGE
Sign In
Video ▸ Library ▸ All Video
Search
Playlists
Create Playlist
Unrated Pix
Favorites 1-17-...
My Favorites
North By Nort...
Untitled Playlist
Now Playing
Library
Recently Added
All Video
Actors
Genre
Rating
RCA_LYRA
Sansa e260
Title
Length
Release Year
Genre
Actors
Rating
Size
Parental
Bear
13 seconds
Butterfly
10 seconds
Lake
11 seconds
Windows Movie Maker 2 Sample File
12 seconds
105 items
Unrated Pix
CN Santa Train_Clifton 20...
Save Playlist

Figure 8.22

The All Video view of the Video Library, displaying sample videos provided with Windows Vista.

You can view videos by Genre, Actors, Rating (1–5 star or unrated), All Video (as in Figure 8.22), and Recently Added.

When you select the Rating view, WMP 11 displays two views at once, My Ratings (at top), and Auto Ratings (based on the number of times you play a video) below that. You can select videos based on either rating system.

Playing Videos

You can play videos in the same ways as photos and music:

- Select one or more videos and click the Play button.
- Right-click a video or selected videos and select Play.
- Create a playlist.

To create a video playlist, drag one or more to the Playlist area at the right of the WMP 11 interface.

TIP

Don't forget that you can mix and match media in your playlist! Select the media type you want to play, drag over the items to the playlist, select another media type, drag over some more items, and continue until you have the playlist you want. Use Save Playlist to save your list.

Playing DVDs with WMP 11

The biggest news in WMP 11 is its capability to play DVD video. If you're satisfied with WMP 11's integrated DVD decoder's features and performance, you won't need to install a third-party DVD decoder program. To play a DVD, just insert it into your system's DVD drive. If an AutoPlay menu appears, select Play DVD Video Using Windows Media Player. On Vista versions that include Media Center, Media Center is also listed as a playback option.

If AutoPlay does not appear, or you stopped playback, open WMP 11, select Other Media as the media type, go to Library view, click the icon to display the contents of the DVD, and click the Play button.

Use your mouse to select scenes, subtitles, and other features. To view the movie in full-screen mode, click the Full Screen icon in the lower right-hand corner of the WMP 11 interface (or press Alt+Enter).

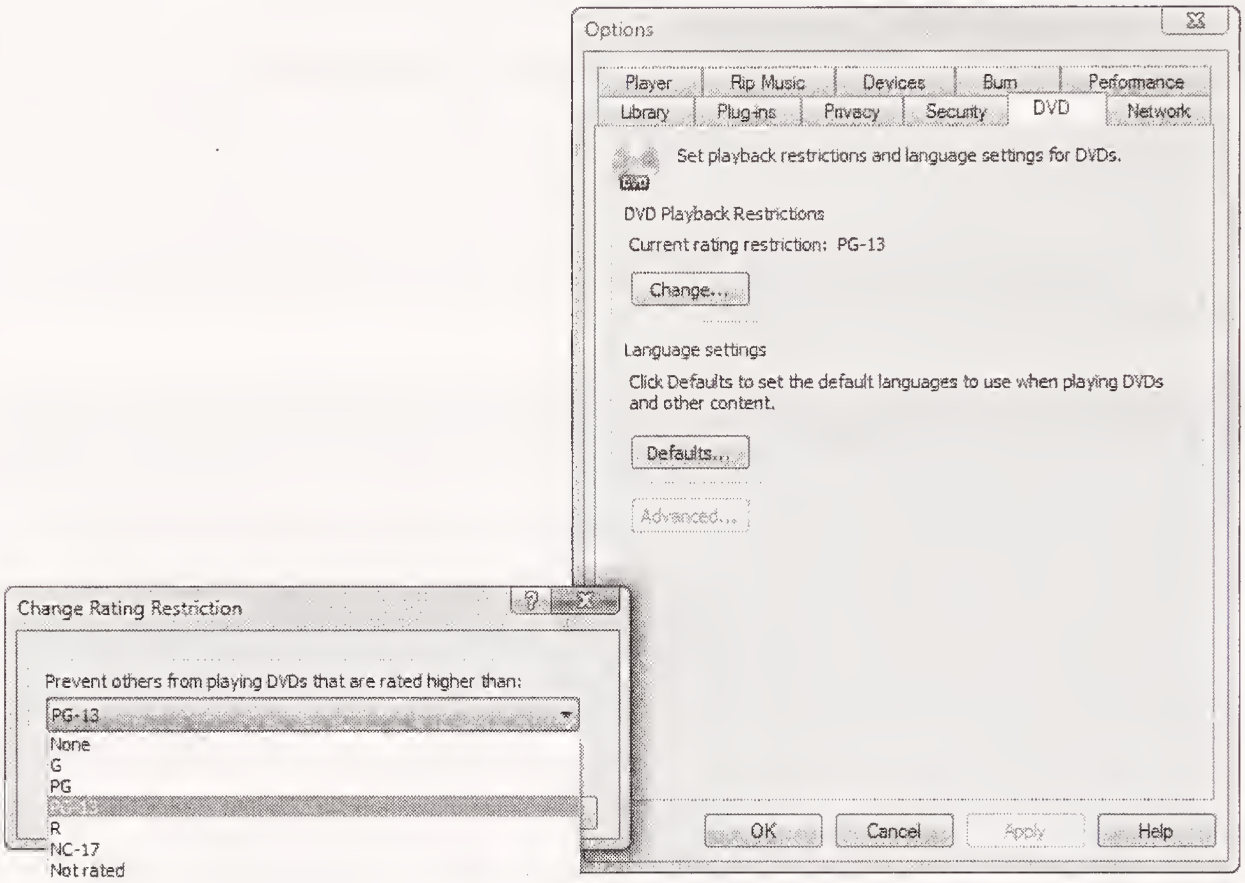
Use the DVD icon to the left of the Player controls to select special DVD playback options, including audio and language tracks, menus, camera angles, capture image, and to update DVD information.

To jump directly to a favorite scene, right-click it in the Library view of the DVD and select Play. To play only selected scenes, select the scenes you want to see, right-click the group, and select Play. (You cannot drag scenes from a DVD to the Playlist.)

Enabling and Using DVD Playback Restrictions

To block WMP 11 from playing DVDs with undesired MPAA ratings, you need to enable Windows Vista's Parental Controls for user accounts. Click Library, More Options and select the DVD tab. Click Change in the DVD

Playback Restrictions section of this tab and choose the maximum rating you want to play (see Figure 8.23).


Options
Player
Rip Music
Devices
Burn
Performance
Library
Plug-ins
Privacy
Security
DVD
Network
Change...
Defaults...
Advanced...
OK
Cancel
Apply
Help
Change Rating Restriction
None
G
PG
PG-13
R
NC-17
Not rated

Set playback restrictions and language settings for DVDs.

DVD Playback Restrictions

Current rating restriction: PG-13

Language settings

Click Defaults to set the default languages to use when playing DVDs and other content.

Prevent others from playing DVDs that are rated higher than: PG-13

Figure 8.23

Selecting PG-13 as the maximum MPAA rating allowed for DVD playback within WMP.

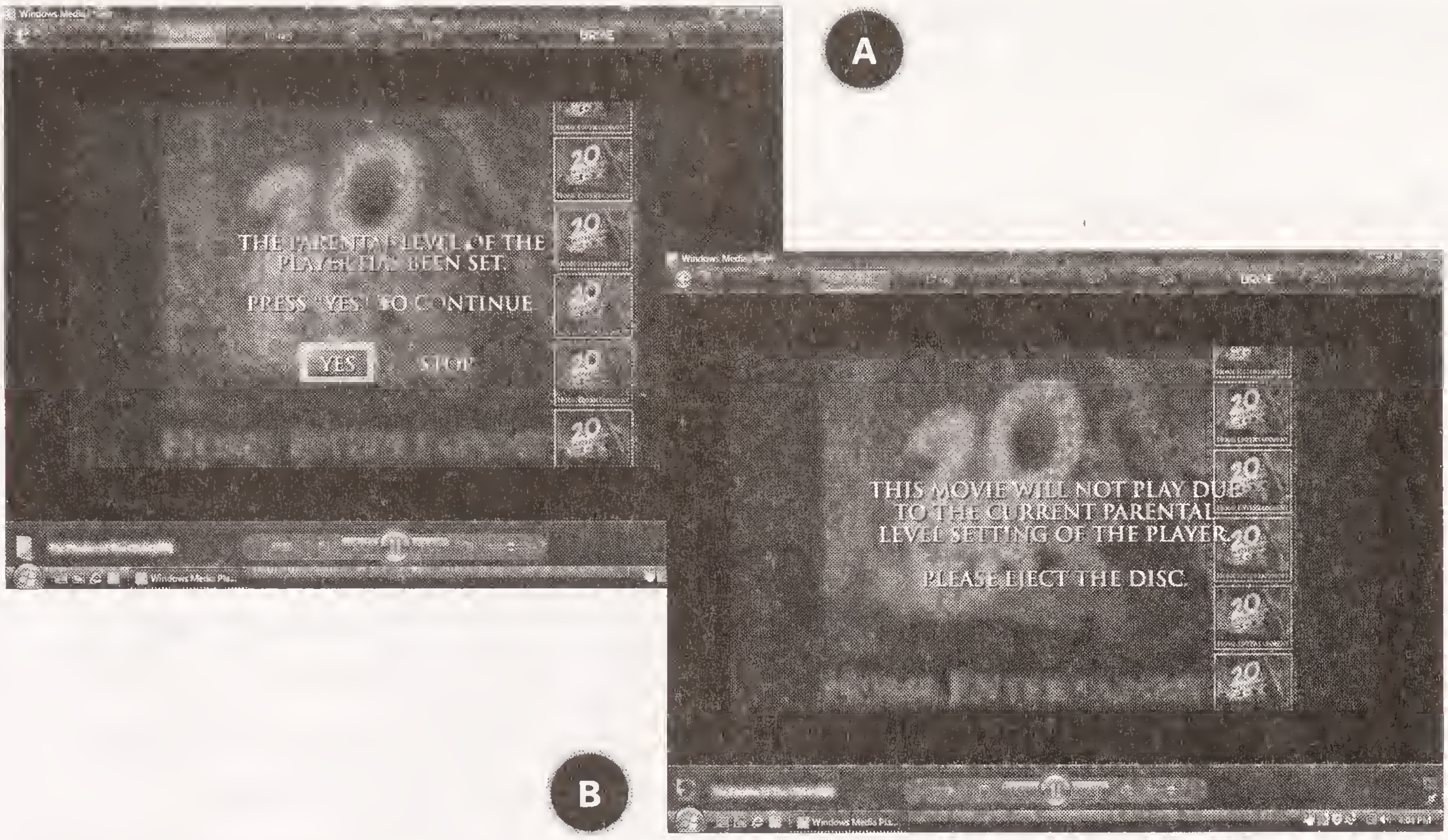
Click OK. If the User Account Control permissions dialog appears, click Continue to proceed. If you haven't configured your Vista user accounts for use with parental controls, Vista reminds you that these controls must be set up properly to enable this option.

When any user (standard, administrator, or guest) tries to play a DVD (see next Caution) that exceeds the playback restrictions set on the system, a 'Press Yes to Continue' dialog should appear (see Figure 8.24 A). Administrators can just click Yes and the movie starts. However, User Account Control kicks in if the current user is a standard user or a guest: these users must provide the password for the listed administrator. If they don't, they'll see a "This movie will not play" message (see Figure 8.24 B). Th-th-that's all, folks!

For detailed coverage of parental controls and user accounts, see "Managing User Accounts and Family Safety," Chapter 14, p. 329.

NOTE

Only standard user accounts are affected by DVD playback restrictions. To make sure DVD playback restrictions work properly, make sure the users you want to restrict have standard accounts. Also, keep in mind that some DVDs don't support this feature.



THE PARENTAL LEVEL OF THE PLAYER HAS BEEN SET.
PRESS "YES" TO CONTINUE

THIS MOVIE WILL NOT PLAY DUE TO THE CURRENT PARENTAL LEVEL SETTING OF THE PLAYER.
PLEASE EJECT THE DISC.

A This DVD supports playback restrictions (parental level controls).

B No administrator password? Show's over!

Figure 8.24

WMP 11 blocks movies it recognizes with a rating higher than permitted.

If WMP 11 doesn't recognize your DVD, you can use the Find DVD Info option from the right-click DVD menu to search for DVDs by title. You can also edit the information retrieved, or add information if the DVD is not in the database.

Feature Rating: ***Parental Controls***

WMP 11 and TV Recordings

Windows Media Player isn't just a platform for DVD video. You can use WMP 11 as a player for TV recordings made with Windows Media Center (.DVR-MS file format), a feature found in both Windows Vista Home Premium and Windows Vista Ultimate.

To review the differences between Windows Vista editions, see Chapter 2, "Windows Vista Versions." To learn more about Windows Media Center, see Chapter 9, "Windows Media Center the Vista Way."

To play an individual TV recording, select it and click the Play button on the WMP 11 player controls.

WARNING

Before you get lulled into thinking that WMP will always stop your kids from watching *Teenage Killer Zombies from Space* or other unsuitable drek, keep in mind that DVD Playback Restrictions work only for DVD movies that WMP 11 recognizes as having support for DVD playback restrictions. Unfortunately for concerned parents, there are plenty of films from all types of vendors that don't support this feature. Bottom line: If you don't want the kids watching stuff for grownups, lock up the DVDs. Don't expect WMP 11 to do your parenting job for you.

TV recordings are organized into the following views:

- Recently Added
- All TV
- Series
- Genre
- Actors
- (Star) Rating

If you want to edit the information used to categorize a recording, select the view you want to change, right-click the recording, and enter the correct information. Figure 8.25 demonstrates how to change a recording's genre from Unknown to Documentary. There's no pull-down menu of choices, so enter whatever text you want to use for classifying a recording.

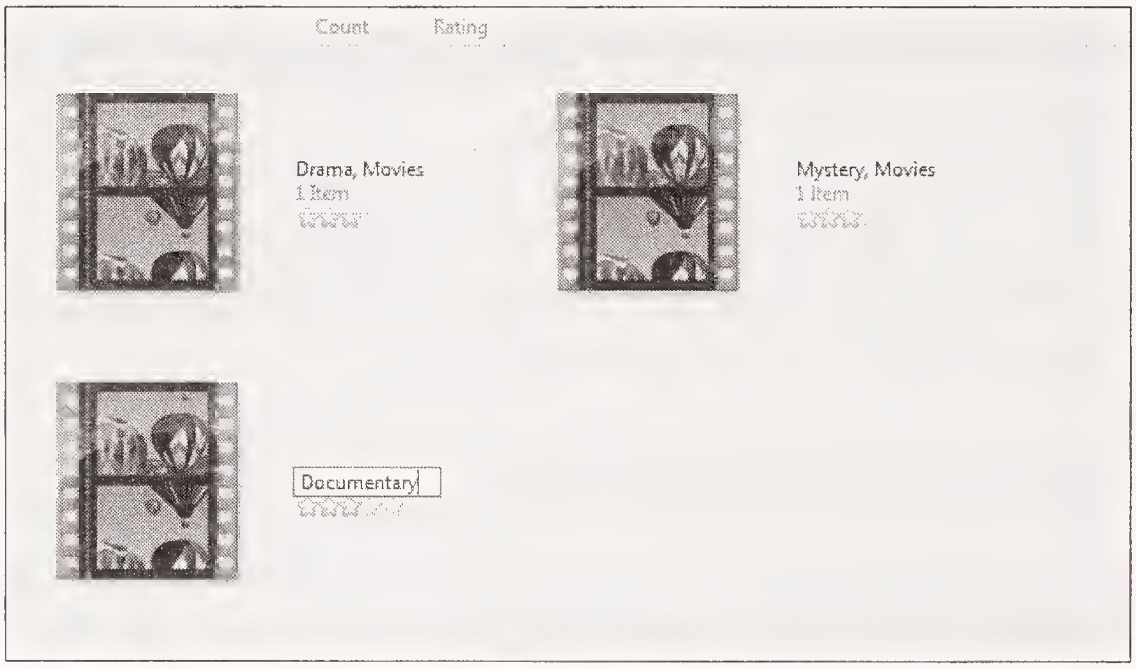


Figure 8.25

Editing the genre used for classifying a recording.

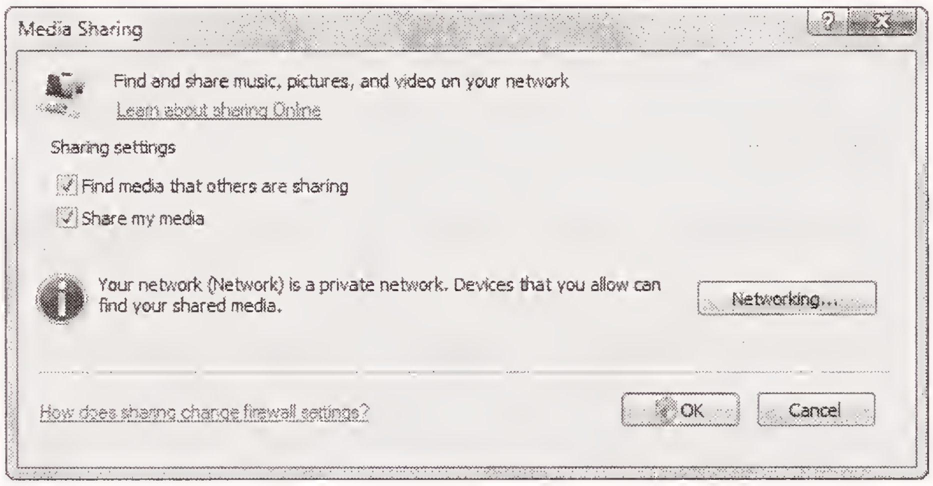
To add recorded video to a playlist, you can drag it to the Playlist pane at the right side of the WMP interface and use the Save Playlist button to save the playlist. You can also right-click a recording and select Add to Untitled Playlist or Add to and select Now Playing or a specific playlist.

Feature Rating: ***TV and Video Recording Support***

Media Sharing and Your Home Network

One of the big features of the separate Media Center Editions of Windows XP was the ability to share your media files across a network. However, even if your version of Vista does not include Media Center capabilities, WMP 11 can share files across a network and play media from network shares as well.

However, WMP won't share or use shared media unless you enable this feature. To get started, click the Library top-level menu and select Media Sharing..., or open the Library tab on the Options menu (refer to Figure 8.5) and click the Configure Sharing button. Either method opens the Media Sharing dialog you see in Figure 8.26.


Media Sharing
Learn about sharing Online
Networking...
How does sharing change firewall settings?
OK
Cancel

Find and share music, pictures, and video on your network

Sharing settings

☑ Find media that others are sharing
☑ Share my media

Your network (Network) is a private network. Devices that you allow can find your shared media.

Figure 8.26

The Media Sharing dialog enables you to share media and play back shared media on other PCs.

To play shared media on other devices (PCs, Xbox 360 game consoles, network storage, and so on), make sure that Find Media That Others Are Sharing is selected. To share media with other devices, make sure that Share My Media is selected.

Click the Networking button to open Vista's Network and Sharing Center. If you cannot see other users' libraries, or they can't see yours, make sure the network is properly configured.

For information about setting up and configuring your network, see Chapter 12, "Building a Home Network the Windows Vista Way," page 289.

Windows Media Player Tips and Tricks

Although Windows Media Player 11 has more goodies than ever before, sometimes it can be difficult to figure out the easiest way to get something done. Use the tips and tricks in this section to make WMP even easier to use.

Playback

- You don't need to create a playlist to play several media items. Just select them in the Library view, right-click the selected items, and select Play.
- To play an entire album or DVD, right-click any track or chapter and select Play All.
- Unless you're running a dual-core or quad-core processor (both of which handle multitasking extraordinarily well), you can improve DVD playback by making sure that you're not running other programs at the same time. You can also use the Performance Options tab to fine-tune performance settings.
- If you want to play music while viewing your pictures without downloading a visualization, start your music in WMP 11 and then open up your Pictures folder and click the Slide Show button.
- For a more interesting slideshow, download the Picture Viz I or Picture Viz II visualizations and play your music. These provide interesting picture transitions without leaving WMP 11.
- To optimize audio playback quality, turn on SRS WOW effects in the Enhancements menu of the Now Playing tab.
- If you don't use visualizations and use WMP 11 only for music playback, enable Allow Screen Saver During Playback.
- If you frequently play media on network folders or removable media drives, enable the option to add those folders or drives to your library to save time.

CD and DVD Burning

- The older the device you plan to use to play burned CDs, the more likely it is that CDs burned at the fastest speed might not play properly. You can choose from four speeds: Fastest, Fast, Medium, and Slow. Try using the next slower speed to burn media and then test it in the device if you have problems with your device not recognizing the CD. Keep going until you get to Slow.
- Use volume leveling only when it makes sense. Although it can save you from a lot of knob-twisting to adjust the volume during playback, it

can diminish the impact of quiet passages contrasted with louder passages in audio tracks. If in doubt, burn the CD with volume leveling disabled and enabled and see which result you like better.

- Rewritable CD and DVD media (CD-RW, DVD-RW, DVD+RW) are great for creating temporary mixes for use in your PC or in recent standalone audio players, but they can be problematical for playback in older devices. In those cases, use recordable CD or DVD media.
- If you want to create an enhanced CD (a disc that includes both data and music), use a CD and DVD mastering program such as Roxio Easy Media Creator or Nero 7 Ultra Edition Enhanced, instead of WMP 11's integrated burning feature.

DVD Playback

- To fine-tune movie playback speed to make it easier to find your favorite movie moments, open Now Playing, Enhancements, and select Play Speed Settings. The range of playback speeds vary by film, and you can change speed anytime you like.
- To eject a DVD directly from the left pane library view, right-click the DVD and select Eject.

Video and TV Playback

- For better performance when playing back WMV (Windows Media Video) and other types of video, specify Enable DxVA Video Acceleration on the Performance tab (refer to Figure 8.7).
- If you're having problems with a loss of synchronization between audio and video, you can drop frames (refer to Figure 8.7), but before you use that option (which will lead to jerky-looking video playback), make sure you have the latest video card drivers installed and are not running any other programs. Sometimes, these changes can help improve performance.
- If you're having problems with playing streaming video from the Internet, make sure you're not downloading other files at the same time, especially if you have a low-speed DSL (under 1Mbps), satellite Internet, or (shudder) dial-up connection. Giving WMP exclusive access to the connection can improve performance.

- If you have no problems viewing streaming Internet media at home or the office, but you're having no luck when you use a public network (such as a hotspot in an airport, library, or café), don't blame the Network Options tab. It's more likely that you need to set up Windows Media Player as an exception in the Windows Firewall.

➪ To learn more about the Windows Firewall, see "Using Windows Firewall," Chapter 14, p. 342.

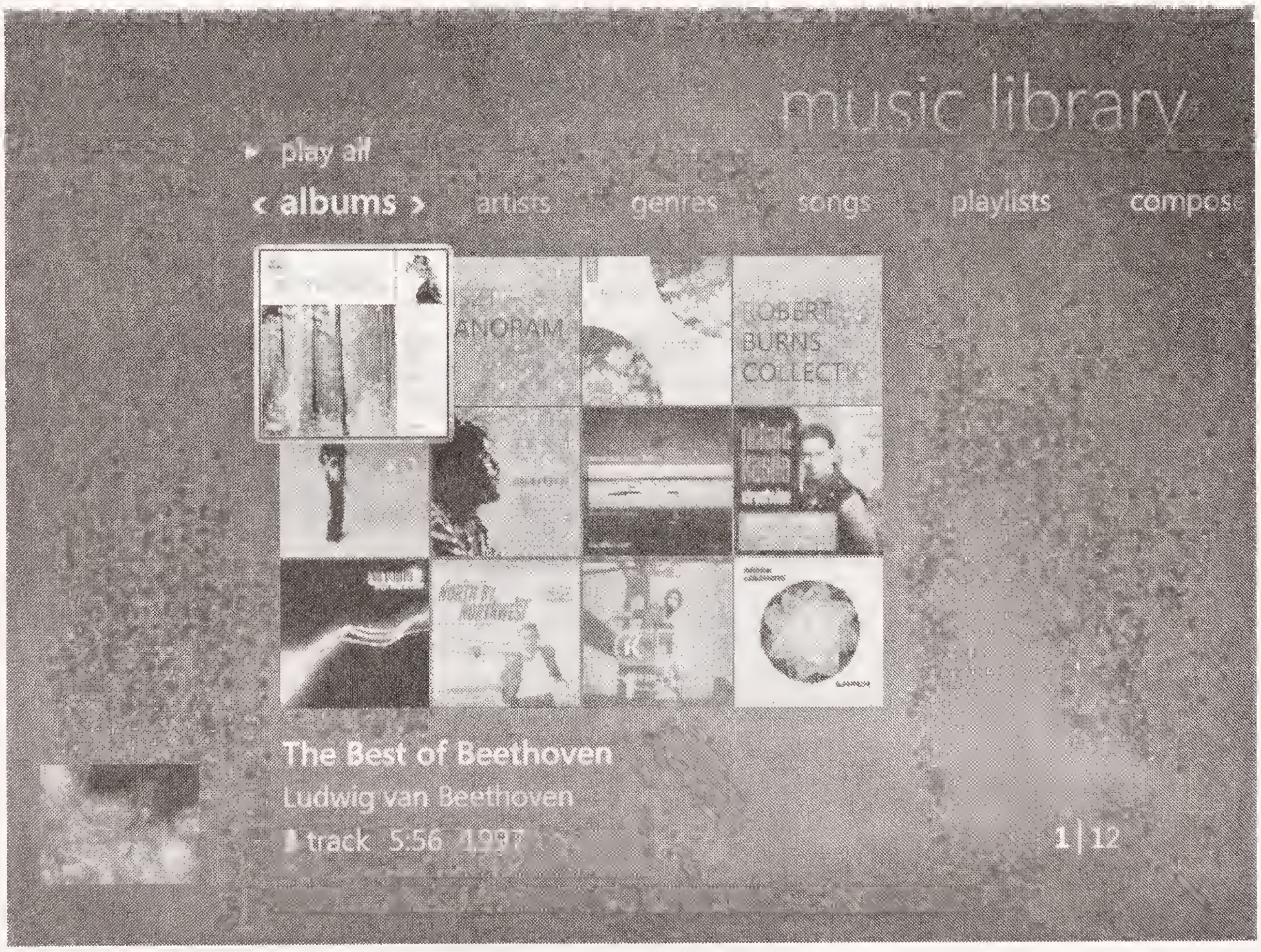
Chapter Nine

Windows Media Center the Vista Way

Taking Live Media from Your Windows Desktop to Your Home Theater System—and Beyond

IN THIS CHAPTER

- Taking Live Media from Your Windows Desktop to Your Home Theater System—and Beyond
- Windows Media Center 101
- Configuring and Using Windows Media Center
- Using the New Windows Movie Maker
- Using Windows Photo Gallery
- Best and Worst Practices for Media Tools


music library
play all
‹ albums ›
artists
genres
songs
playlists
compose
ROBERT BURNS COLLECTI
The Best of Beethoven
Ludwig van Beethoven
1 track 5:56 1997
1|12

Windows Media Center 101

Windows Media Center (WMC) was originally developed as a special edition of Windows XP, adding a full-screen interface control for enjoying movies, TV, video playback and recording, digital photos, and music playback and recording to the base features of Windows XP Professional. Although Windows XP

Media Center Edition 2005 (the last edition of XP MCE) became a popular choice for home PCs and laptops in 2006, many PC users never got the opportunity to try it.

Now, with its incorporation WMC into Windows Vista Home Premium and Ultimate editions, WMC has arrived as a mainstream multimedia package. Whether you use Windows Vista to play DVD movies or CD music, watch videos and live TV, record live TV, or enjoy your own video or photographic creations, WMC makes the experience better. And, because WMC supports a wide range of video and audio output devices, you can connect it to virtually any TV to make your media available to family and friends.

Using the WMC Interface

The WMC interface uses vertical scrolling to select program components and horizontal scrolling to select a particular feature. A highlight box in the center of the display indicates the selected item. An IE7-like back arrow in the upper-left corner is used to return to the previous dialog. Normally, WMC is run in full-screen mode, but you can minimize it to go back to your desktop or run it in a window with the window control buttons in the upper-right corner. Playback and channel controls are found along the bottom edge of the display. As Figure 9.1 indicates, WMC's famous "10 foot user interface" features much larger fonts and icons than the normal Windows Vista desktop, so you can navigate it easily from across the room with standard or HD TVs (see Figure 9.1).

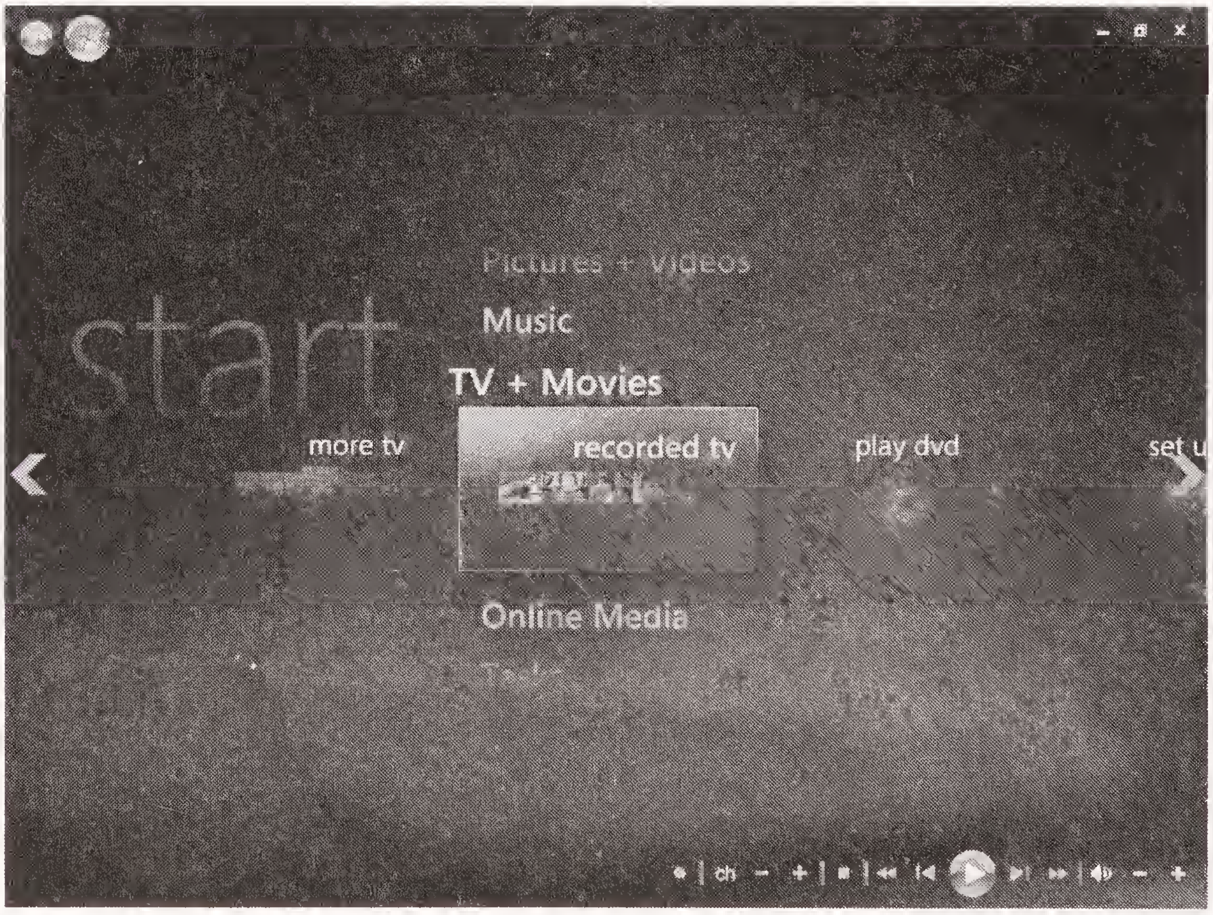


Figure 9.1

The Windows Media Center interface.

Options to Make Windows Media Center Better

WMC can be used with a standard PC, unlike its Windows XP predecessor. However, if you're planning to get the most out of your experience, consider adding the following hardware:

- TV tuner—Choose a tuner that receives the type of TV signal you prefer: traditional broadcast and analog cable or over-the-air HDTV.
- Remote control—Most TV tuner USB or card devices include a remote control, and the good news is that it need not be Windows XP MCE compatible.
- Connections to your TV—You can use anything from a low-end composite connection to a high-quality DVI or HDMI connection and WMC will look good. However, if you want to use your TV as your only display, I recommend using DVI, HDMI, or component video.

NOTE

The first HDTV cable tuner to reach the market is the ATI TV Wonder Digital Cable Tuner from AMD. It is available only to OEM computer suppliers at present because digital media content protection issues require modifications to the system BIOS.

Many HDTVs do not include a DVI connector. However, you can purchase a DVI to HDMI converter cable, assuming that your graphics card and driver include HDTV support. DVI and HDMI provide better picture quality than component video, but if you want to save money on cabling, component video cabling is less expensive, and some recent graphics cards include support for component video and lower-quality S-video output on a special dongle.

Your Pre-Setup WMC Checklist

Before you start the WMC configuration process, make sure you have done the following:

- Installed and connected the TV tuner and remote control hardware you want to use with WMC.—WMC will detect and use installed hardware but will bombard you with an endless string of "Tuner not installed" messages if you run TV tuner setup when your tuner is not connected or not yet installed.
- Installed the latest graphics card drivers from your vendor—The bare-bones drivers included with Windows Vista don't include HDTV support or other fine-tuning features you may need for enjoying the best picture quality with either a PC display or a TV.
- Checked the range of your wireless keyboard and mouse—If you are planning to use WMC mainly as a supercharged set-top box but may

occasionally need to interact with a keyboard and mouse during normal use, make sure a wireless keyboard and mouse have sufficient "oomph" to reach from the couch or recliner in your home theater room to the PC.

- Configured your screensaver—You may want to disable the screensaver to avoid the need to use a mouse or keyboard to bring the system out of standby. However, if your TV is subject to burn-in, you may prefer to configure the screensaver to use a longer delay and keep a wireless mouse with sufficient range handy in case it kicks on.
- Finished configuring your PC's BIOS and startup setup—If you are using a standard or HDTV as your only display, you will not see anything onscreen until the friendly Windows Vista logon menu is displayed. Error or status messages that show up on a normal computer display during boot don't make it to the TV.
- Checked network connections to other PCs—If you want to enjoy everybody's music, video, and photo collections, their systems must be configured to allow network connections to their media folders.

Configuring and Using Windows Media Center

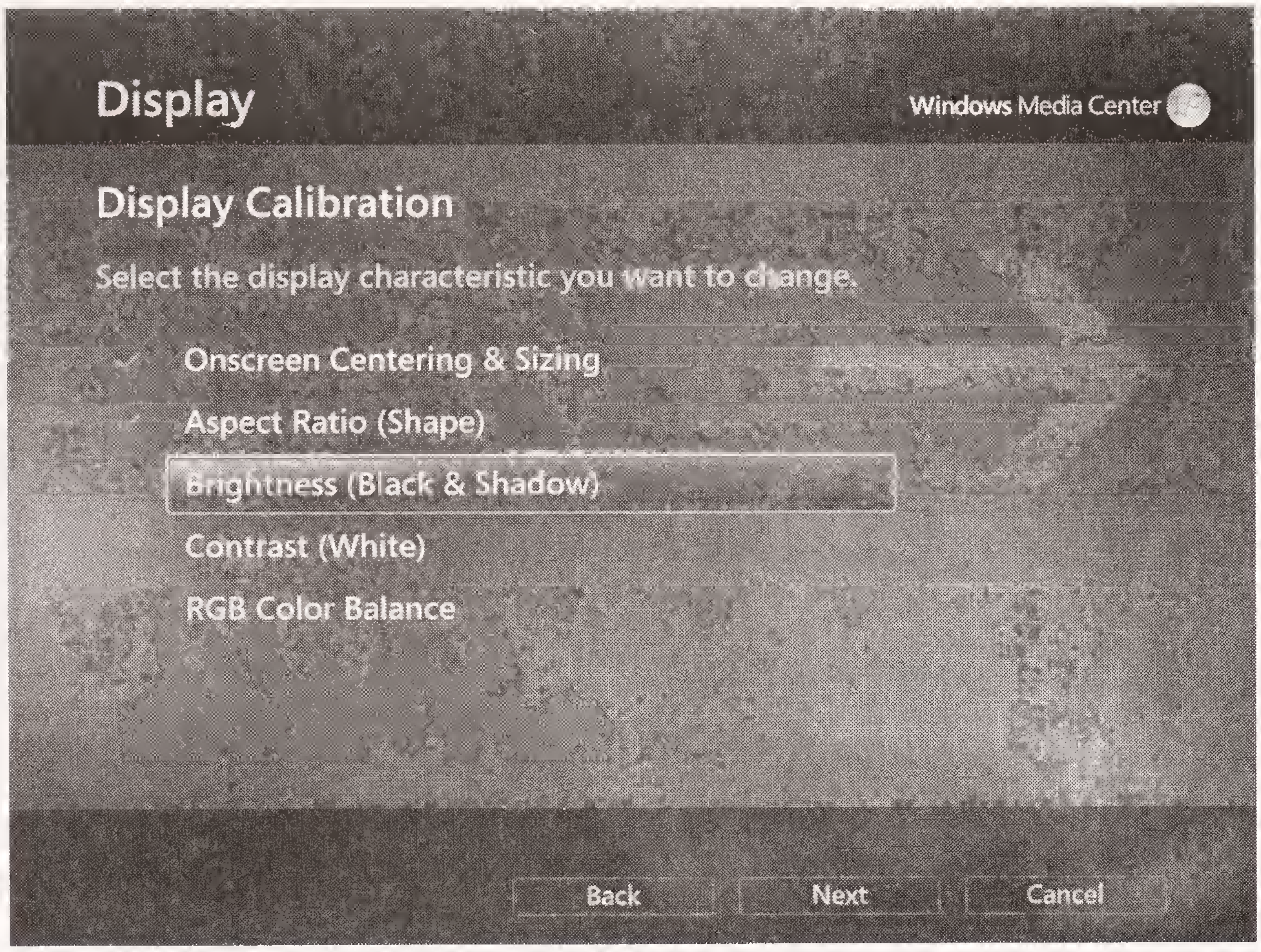
When you start WMC for the first time, you are prompted to set up the program. You can use Express Setup or Custom Setup, or you can skip setup for now and do it later.

Selecting Custom Setup starts a wizard-driven setup process. Part 1 (required) checks network and Internet connections and configures settings for the Customer Experience Improvement Program and Media Center media information downloads.

Part 2 (optional) sets up tuners, TV signal, and program guide; display optimization; speakers; and media libraries. You can run only the configuration options that match your hardware. As you complete each section, WMC checks it off for you (see Figure 9.2 for a typical example), and you can end the configuration process at any time.

NOTE

Express Setup is fast, because all it does is configure your system to download media information from the Internet and sign you up for the Customer Experience Improvement Program. If you want to configure WMC to use all your multimedia hardware and find your media files, choose Custom Setup. If you choose Express Setup, you can configure additional features through the Tasks menu and Settings submenus later.


Display
Windows Media Center
Display Calibration
Onscreen Centering & Sizing
Aspect Ratio (Shape)
Brightness (Black & Shadow)
Contrast (White)
RGB Color Balance
Back
Next
Cancel

Select the display characteristic you want to change.

Figure 9.2

The Display Calibration checklist—two out of five tasks completed.

Configuring TV Setup

During the TV setup process, you select a region, set up your TV signal (WMC scans for signals from set-top boxes, direct cable TV hookups, and broadcast signals), and sets up the optional TV Program Guide, which is free for now, but the terms of service state that Microsoft could charge for it later. Any bet whether they will? During guide setup, you're prompted for your ZIP Code and for your cable or satellite TV provider to make sure you download accurate program listings. When the guide is downloaded, this process is complete.

Configuring Your Display

At the beginning of the display configuration process, you have the option to watch a short video that seems to be populated by rejects from *Friends.* If you're familiar with color matching, aspect ratios, and other video issues, feel free to skip it, but if you're a video newbie, spending a few minutes watching attractive people play pool might be worthwhile.

NOTE

Depending on your graphics card and driver, you may need to use the standard Display Settings option in Control Panel's Personalization menu, click the Advanced button and select a submenu dealing with displays, or use a proprietary graphics setup program to select and use a different display.

First, the wizard asks whether you're using your preferred display. If not, you can select a different display.

Next, select the display type, followed by the connection type (composite or S-video; DVI, VGA, or HDMI; component), and the display width (4:3 standard or 16:9 widescreen) for external displays, or the display width for built-in displays. Using these settings, WMC can provide a preview of suggested optimizations, or you can leave your current settings alone. After you select or skip optimizations, you can use the wizard to manually adjust brightness, contrast, and other settings, or finish the wizard (you can use the Tasks menu to make additional adjustments later).

Speaker Configuration

During speaker configuration, you first select your speaker connection type, followed by your speaker setup. Again, as with display configuration, sketches are there to help you out—unfortunately, you can't ask WMC to crawl around on the floor to *see* your connectors.

After selecting your speaker hardware, click Test to test your speakers (you should hear a different tone from each speaker). Select I Heard Sound and complete the wizard or select I Did Not..., which displays a few troubleshooting steps and provides the option to try testing again or to wrap up the wizard.

Setting Up Media Libraries

By default, WMC watches your default media folders (the current user's Music, Pictures, and Videos and Shared Music, Shared Pictures, and Shared Videos) for media files. Use the Add Folder to Watch button to add folders and Stop Watching a Folder to tell WMC to fuggetaboutit.

Select the locations for folders; then choose the folders you want to watch (see Figure 9.3). Click an empty check box to select a folder. Local folders are listed on the first dialog, and network folder shares are listed on the second dialog. After you select local and network folders, review the list of added folders, and click Finish to confirm your selections. An Adding Media dialog with a progress bar is displayed during the search process. Click OK immediately to return to WMC, or wait until the process is complete to click OK.

NOTE

The Add Folder option isn't just for other systems' folders: Use it to watch other users' folders on a shared system or to watch media you've stashed on an external hard disk.

If you don't see the folders you want to watch, make sure the folder's been configured to permit access.

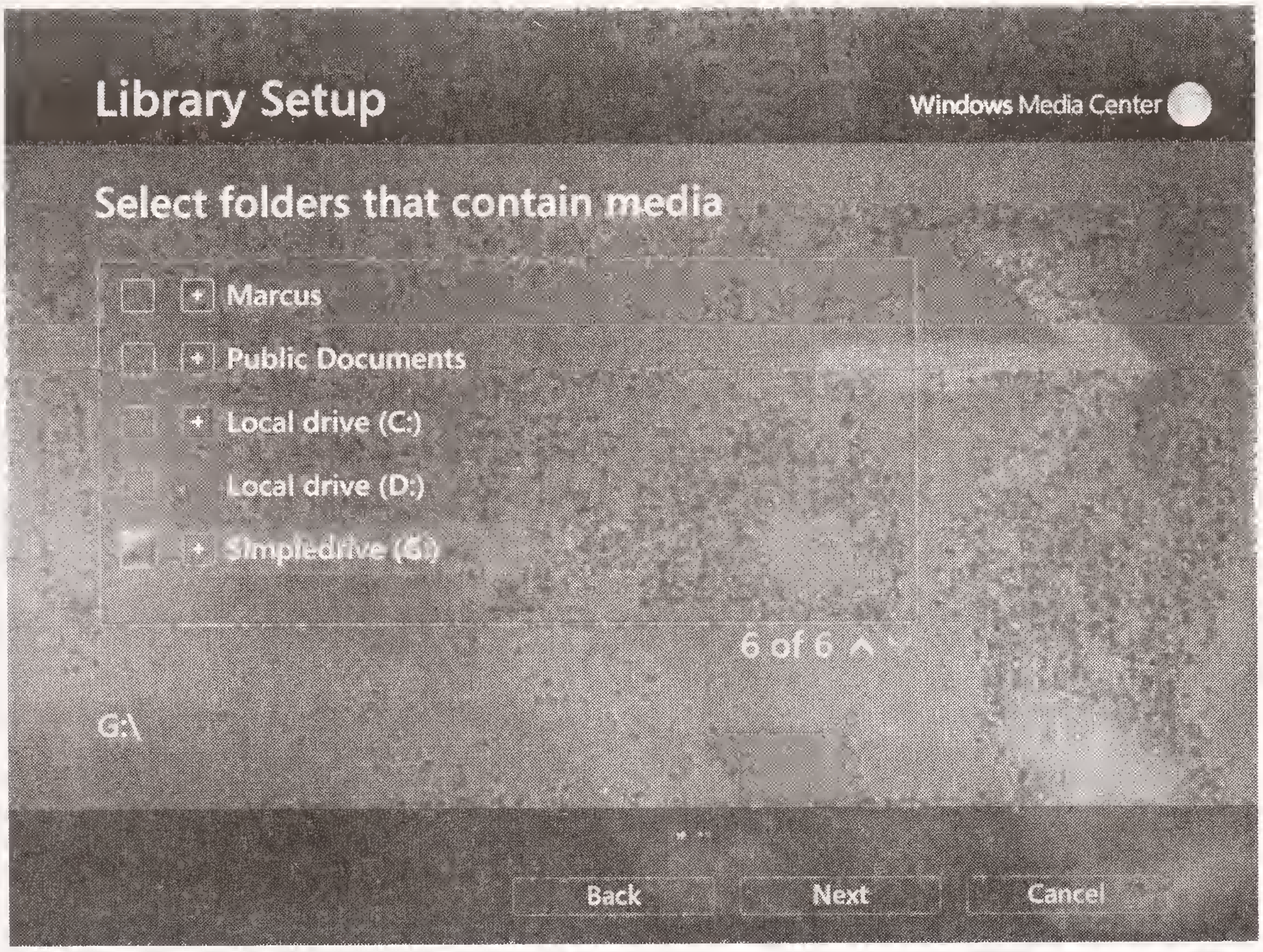

Library Setup
Windows Media Center
Select folders that contain media
☐ + Marcus
☐ + Public Documents
☐ + Local drive (C:)
☐ Local drive (D:)
☑ + Simpledrive (G:)
6 of 6
G:\
Back
Next
Cancel

Figure 9.3

Selecting folders to watch for media.

Other Configuration Options

To configure other settings, use Tasks, Settings. Some of the additional configuration categories to choose from in the General section include

- Parental Controls
- Automatic Download Options
- Startup and Windows Behavior
- Optimization

Viewing TV and Movies

By default, WMC opens the TV + Movies category after you finish configuration. Choose from the following:

- Recorded TV
- Live TV (requires a TV tuner)
- Guide
- Movies Guide
- Play DVD
- Search

TIP

If you are setting up WMC on a home entertainment server, consider these options:

- If you want WMC to appear as soon as you start Windows, select Start Windows Media Center When Windows Starts in Settings, General, Startup and Window Behavior.
- If you are using your computer strictly for media playback, select Media Only from the Tasks menu. This option disables the window control buttons (preventing the display from being windowed or minimized).

NOTE

In this chapter, I discuss using a mouse to control WMC. However, if your TV tuner includes a remote, you can also use it to control many aspects of WMC.

NOTE

The mini program guide is useful if you have a remote control: Use its up/down buttons to view other current programs; use its left/right buttons to navigate through forthcoming programs.

To watch TV, select Live TV. Move your mouse to display a VCR-like toolbar, which appears in the lower-right side of the screen. Use it to change channels, adjust volume, mute audio, or control recorded TV playback (refer to Figure 9.7 for an example of the toolbar and the timeline used for both live TV and radio reception).

Right-click the display to display a menu with options to view program information, record the current show, record the series, perform picture zoom, view a mini program guide, and access a shortcut to all WMC settings (see Figure 9.4). A live thumbnail display shows what's playing now when a full-screen menu is in view.

From the program guide (listed simply as Guide on the TV + Movies menu), you can view current and forthcoming shows and select shows to view or record by schedule or category. To select recording or other options for a particular show, right-click it and select the option desired from the menu.

The Movies Guide displays only movies: on now (films being broadcast now), on next (films being broadcast later in the current day), genres (offers options to select by title, year, rating, and start date), or top-rated (based on your personal ratings).

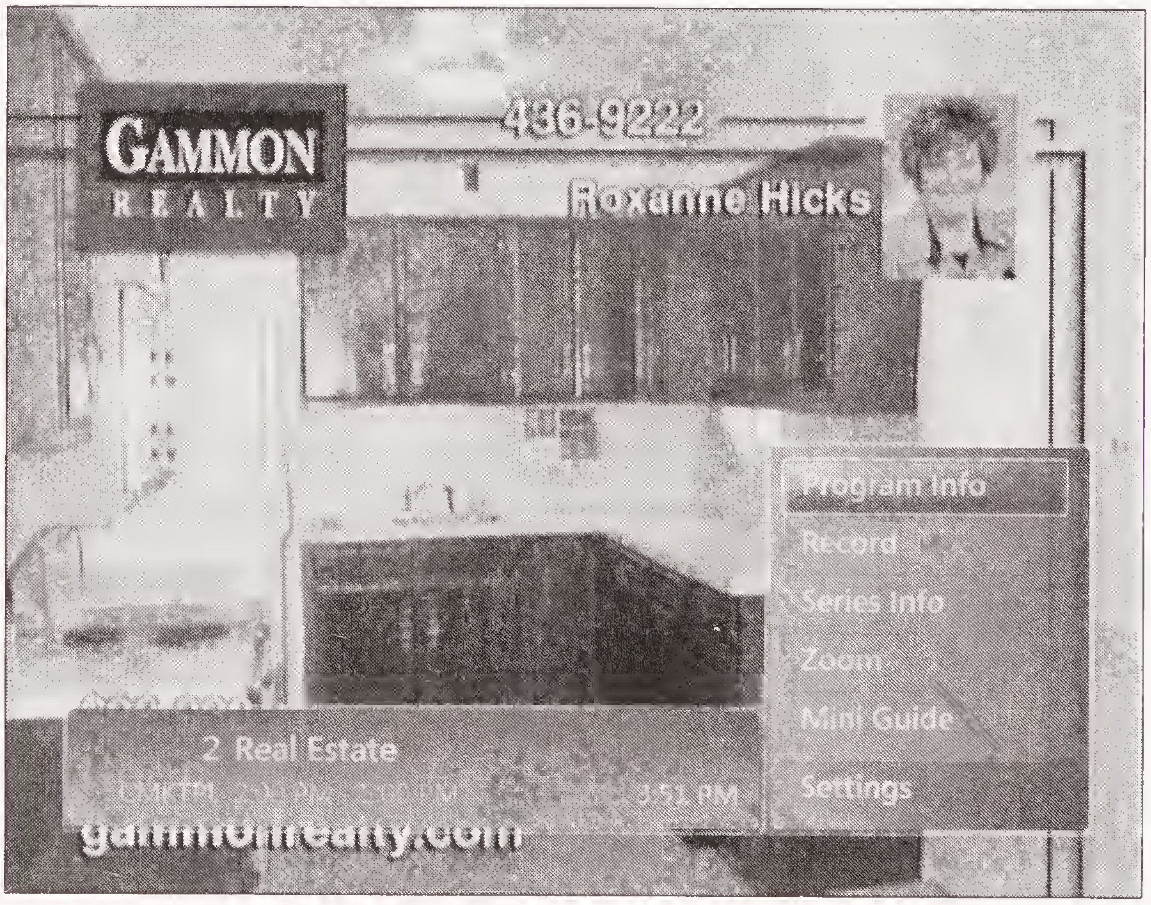


Figure 9.4

Using the right-click menu.

To view movie information (including reviews, cast information, and similar movies), schedule recording, set recording quality and other settings, and see a list of other showings, click a movie.

To play a DVD, insert the DVD and click Play DVD. The DVD starts normally. Right-click the screen to see the current chapter and to open a menu offering details, screen zoom settings, eject the DVD, or adjust WMC settings. Move the mouse to display the playback control.

TIP

Use the Genres search or the Similar Movies view in the Cast + More section of a given film to select films playing on upcoming days.

Recording TV Programs and Movies

You can start recording live TV from the onscreen control, right-click TV menu, or from the program guide. If you have a single TV tuner, you can record only the current TV program. That said, WMC supports two TV tuners. By adding a second TV tuner, you can watch TV through one tuner and record TV through a second tuner, or watch over-the-air HDTV (ATSC) while also accessing cable TV.

When you record a show, WMC places a red dot icon next to the program name in the onscreen display. To stop recording, right-click the display and select Stop Recording from the menu.

To set up a recording from the Guide, open the Guide and right-click the show you want to record. Select Record Series to see scheduling information about the selected series (see Figure 9.5 A). If you select shows to record that conflict with other scheduled recordings, a Conflict dialog appears. Specify whether to record all episodes or only episodes that don't conflict, or select what to do on an episode-by-episode basis.

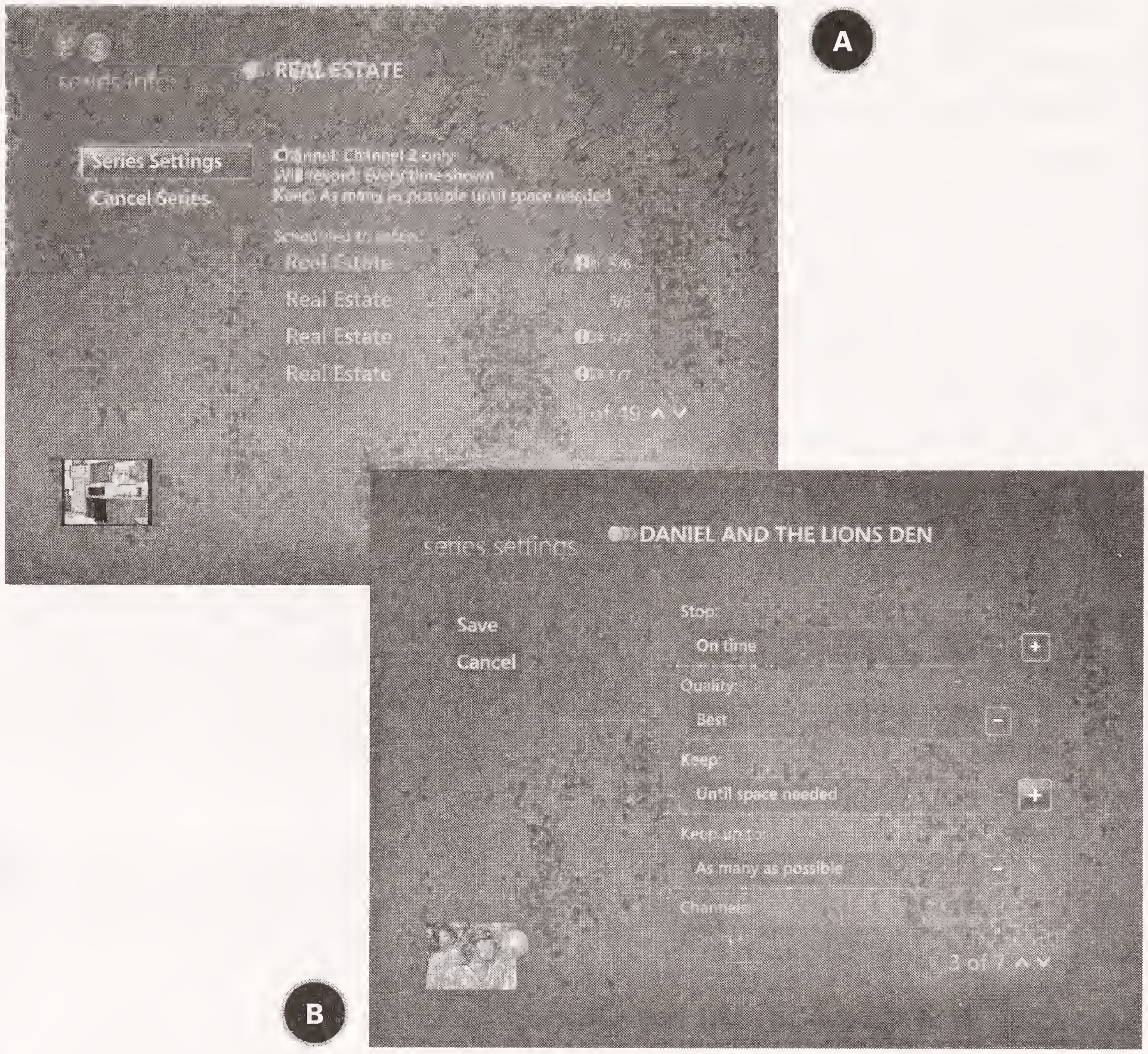
By default, WMC uses Best recording quality. To save space or prevent skipped frames on slower systems, reduce the recording quality. You can also control recording stop time, scan other channels for episodes, choose airtimes, and select whether to record only first run or first run and rerun episodes. To make these adjustments, open View Scheduled, select the program, and select Series Info. Choose Series Settings and make the adjustments desired (see Figure 9.5 B).

TIP

If you need to close WMC while you're recording a TV show, don't worry: WMC keeps recording for you. To see what's being recorded, hover your mouse over the red recording dot in the system tray.

A Preparing to record a series.

B Adjusting series settings.


A
B
series info
REAL ESTATE
Series Settings
Cancel Series
series settings
DANIEL AND THE LIONS DEN
Save
Cancel

Channel: Channel 2 only
Will record: Every time shown
Keep: As many as possible until space needed

Scheduled to record:
Real Estate 5/6
Real Estate 5/6
Real Estate 5/7
Real Estate 5/7

Stop: On time
Quality: Best
Keep: Until space needed
Keep up to: As many as possible
Channels:

3 of 7

Figure 9.5

Recording from the Guide.

Enjoying Music with WMC

WMC gives you easy access to both recorded music in your music library and other music sources, such as FM radio (a feature included in some TV tuner devices).

By default, WMC displays the Music Library when you select Music. The Music Library includes all music available to Windows Media Player, including sample tracks packaged with Windows Vista and albums you've ripped. You can select music by

- Albums (default view)
- Artists
- Genres
- Songs
- Playlists
- Composers
- Years
- Album artists

Essentially, WMC provides all the playback features of Windows Media Player with an interface you can use comfortably from your favorite home theater seat.

When you select an album or an individual music track, you'll see a menu with options for playing the album/track, burning it to a CD, adding it to the playback queue, editing song information (title, track, and rating), or deleting it from your computer (see Figure 9.6 A). Select a track, and you also see an option for buying the music (even if you ripped the track yourself).

During playback, use the control bar in the lower-right corner to adjust volume, pause, or change tracks.

When you attempt to play music that is copy-protected or ripped from a CD, you may be prompted to download or pay for a license (if your system doesn't have the appropriate license already installed).

Album art or an icon in the lower-left corner provides access to the Now Playing menu. Click it to display the current queue, display a visualization, or play a slideshow; shuffle or repeat music; or buy music.

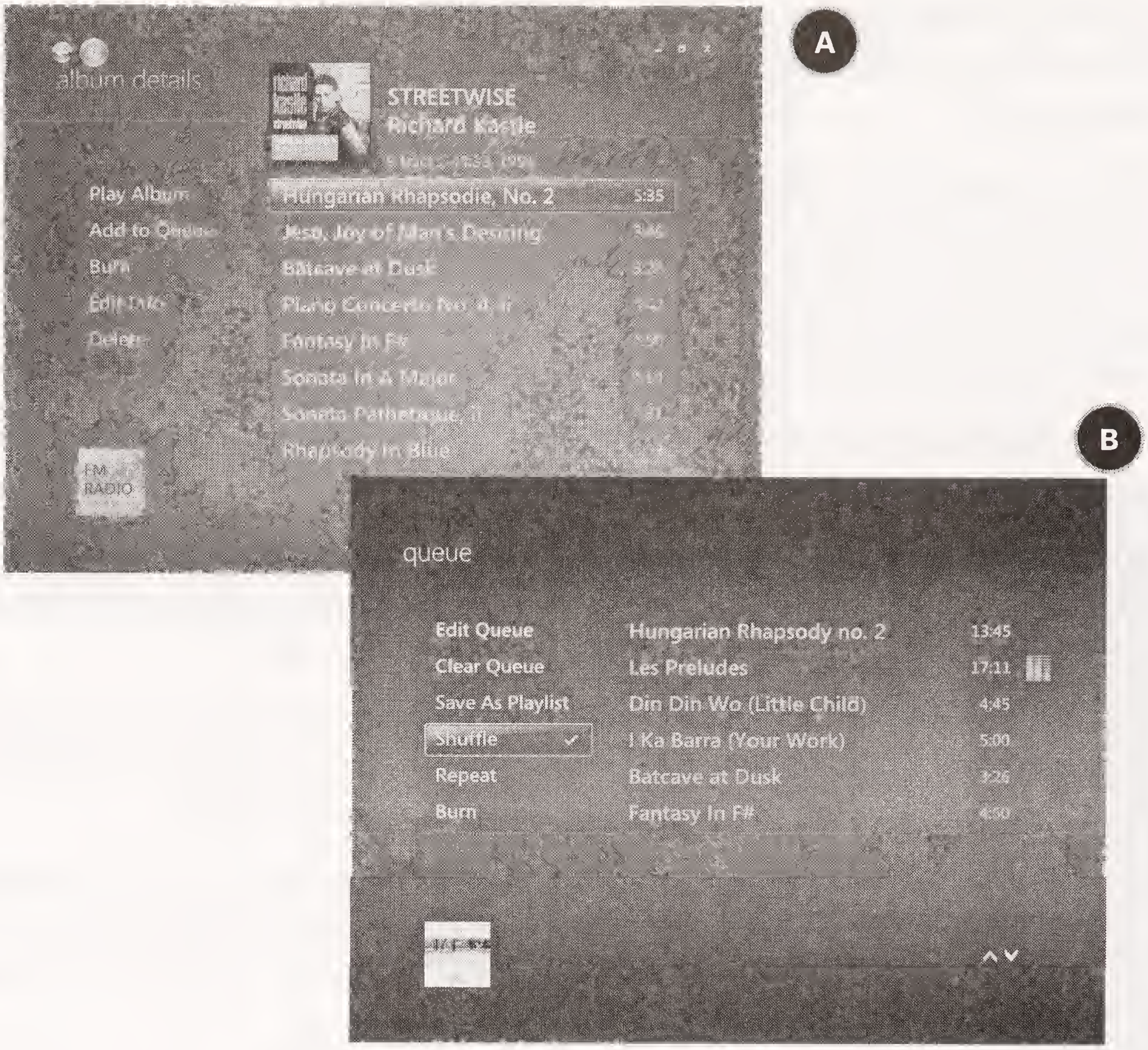
Select View Queue to edit or clear the queue (see Figure 9.6 B), shuffle or repeat songs in the queue, or burn the queue to CD or DVD. A three-bar icon on the right indicates the current song, and check marks indicate the current options selected.

Listening to FM Radio

If you connect an FM radio tuner to your system (many TV tuners include this feature), you can also listen to FM radio with WMC. To get started, select Sources. Use the Seek or Tune buttons to tune in a station. Click Save Preset to enter a descriptive name for the station, such as its call sign or slogan. Repeat the process until you have created presets for each station you want to listen to. To select a preset, click Presets, scroll through the list, and click the station. While you listen to the radio, a timeline displaying the current time is displayed along the bottom edge of the screen (see Figure 9.7).

TIP

Use the timeline to help you switch stations to catch the news, hear your name on the air to win a contest, or pause playback so that you can grab a telephone call.


A
album details
STREETWISE
Richard Kastle
Play Album
Add to Queue
Burn
Edit Info
Delete
FM RADIO
B
queue
Edit Queue
Clear Queue
Save As Playlist
Shuffle ✓
Repeat
Burn

Hungarian Rhapsodie, No. 2	5:35
Jesu, Joy of Man's Desiring	3:46
Batcave at Dusk	3:28
Piano Concerto No. 4, II	[illegible]
Fantasy In F#	[illegible]
Sonata In A Major	[illegible]
Sonata Pathetique, II	[illegible]
Rhapsody In Blue	[illegible]

Hungarian Rhapsody no. 2	13:45
Les Preludes	17:11
Din Din Wo (Little Child)	4:45
I Ka Barra (Your Work)	5:00
Batcave at Dusk	3:26
Fantasy In F#	4:50

A Selecting a track to play.

B Editing the song queue.

Figure 9.6

Options for your music.

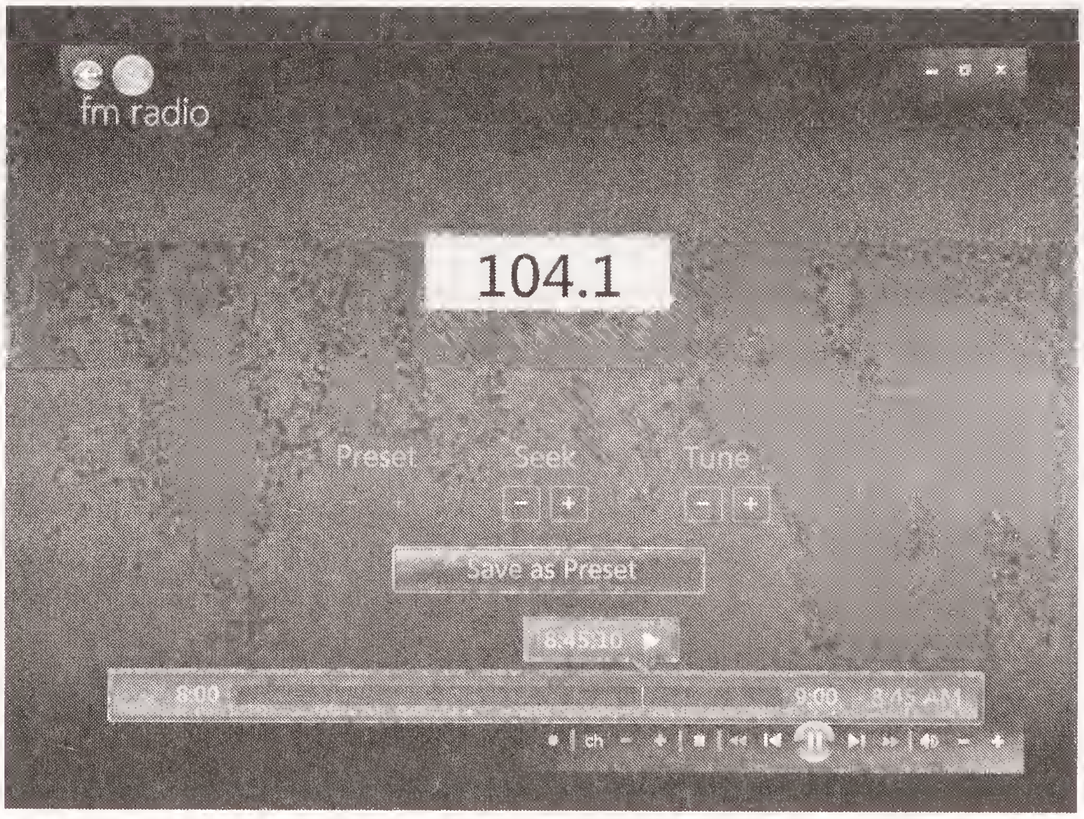

fm radio
104.1
Preset
Seek
Tune
Save as Preset
8:45:10
8:00
9:00
8:45 AM

Figure 9.7

Listening to FM radio.

Viewing Pictures and Videos

Pictures + Videos contains two libraries: one for pictures and one for videos. Select pictures by folders, tags, or date taken. Each folder displays a preview of some of the images along with the folder name. Hover the mouse over a folder to see the number of pictures it contains, as shown in Figure 9.8; hover the mouse over a picture to see its name.

NOTE

The date listed in WMC is the date the picture was modified; to see the date taken and other information, right-click the picture and select Details.

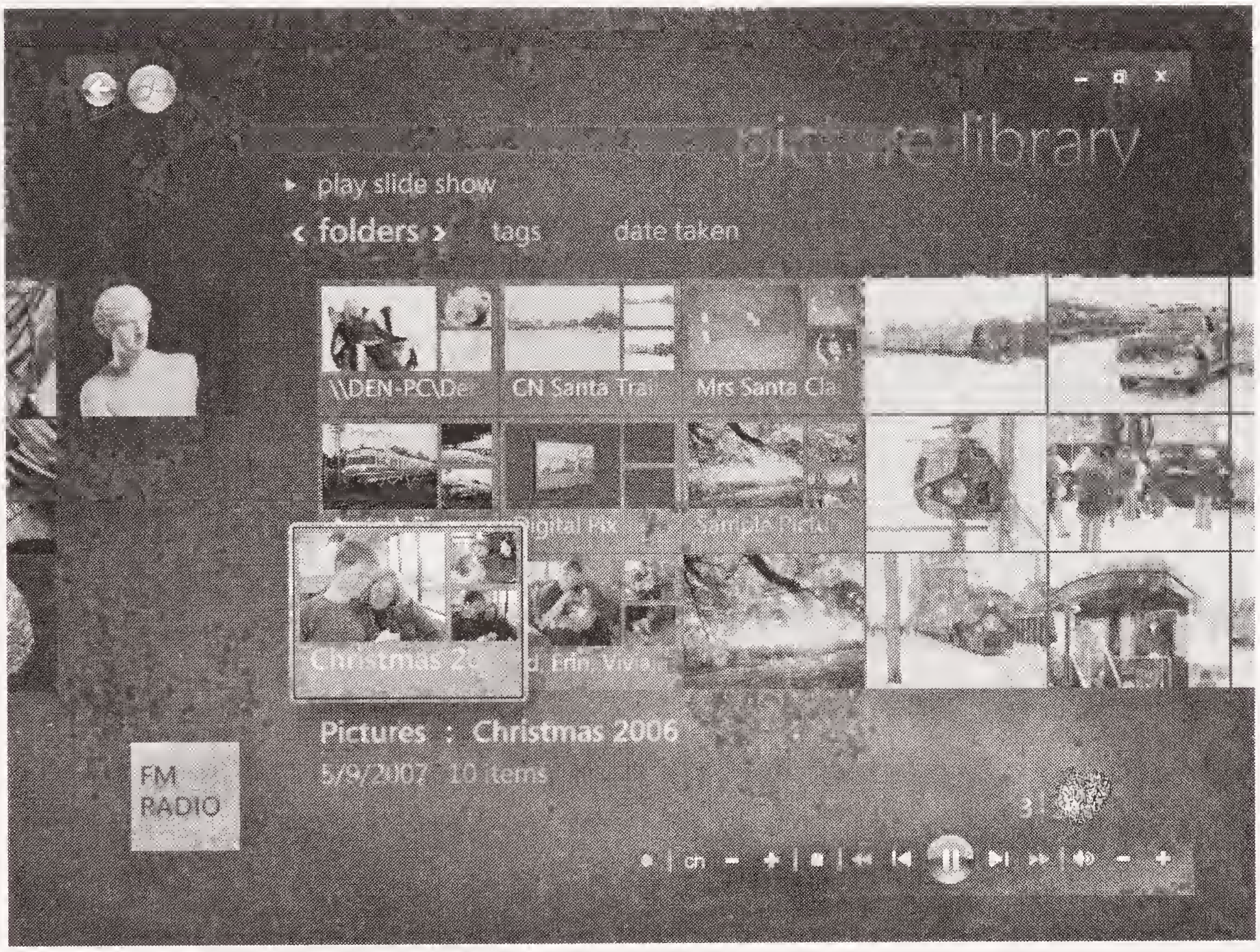

picture library
play slide show
folders
tags
date taken
\\DEN-PC\De
CN Santa Trai
Mrs Santa Cla
igital Pix
Sample Pictu
Christmas 20
d, Erin, Viv
Pictures : Christmas 2006
5/9/2007 10 items
FM RADIO

Figure 9.8

Viewing details of a picture folder in the Picture Library.

The Play Slide Show option displays pictures in the current folder in a pan and zoom "Ken Burns Effect"–style slideshow. To add options such as displaying pictures in subfolders, randomizing picture order, or displaying the name of each picture as a caption, right-click a picture, select Settings, and go to the Pictures section of the Settings menu.

NOTE

It may take a few moments to display thumbnails for photos in the Picture Library, especially for pictures on network shares or removable media.

When you connect a digital camera, DV camcorder, or other drive that contains pictures and videos to your system, WMC displays an AutoPlay menu: Select from Take No Action, Import, or View. Select View Pictures to view the pictures in a Picture Library view.

Select Import, and you are prompted for a folder name (the default is the current date), and you also have the option to delete pictures after importing (disabled by default). Click Import to import the pictures. Click OK on the progress meter to continue to use WMC while the import takes place.

Right-click a folder or picture to switch between large (default) and small thumbnails, change folders to monitor (Library Setup), or go to the Settings menu. You can also burn the folder to CD or DVD, view details for a picture, or delete it.

Use the Picture Details menu to play a slideshow of the pictures in the current folder; rotate, print, or edit (touch up) the picture; delete it, or move to the next or previous picture. These options are also available in Windows Photo Gallery.

⇨ To learn more about the photo editing features available in both WMC and Windows Photo Gallery, see "Using Windows Photo Gallery," this chapter, p. 239.

The Video Library displays videos by folder locations (default) or by date taken. Right-click a video clip to display details, delete the video, or burn it to CD or DVD (it also includes the small/large thumbnail, library setup, and settings options available in Picture Library). Use the Video Library to view movies you make with Windows Movie Maker or with videos you download from the Internet.

⇨ To learn more about creating videos with Windows Movie Maker, see "Using the New Windows Movie Maker," this chapter, p. 235.

Using Online Media and the Program Library

The Online Media menu offers a huge selection of media products and services designed for use with WMC:

- TV and radio networks bring you links to highlights of current shows, live streaming Internet radio, and program guides.
- Online services provide access to entertainment videos, sports scores and stories, news stories and videos, online photo services, and more.

Some features are free, whereas others require a subscription. Dip into the Online Media pool and find out what's swimming around.

Online Media's Program Library offers access to Windows Vista's bundled games designed for use in WMC, third-party programs compatible with WMC (such as Adobe Photoshop Elements 5), and links to online media categories.

Media Types Supported by WMC

WMC can play the following types of media:

- Audio CDs (.cda)
- DVD movies
- Windows Media audio and video files (.asf, .asx, .wm, .wma, .wmv, and .wmx)
- WAVE uncompressed audio files (.wav)
- MP3 audio files (.mp3, .m3u)
- Windows video file (.avi)
- MPEG movie file (.mpeg, .mpg, .mpe, .m1v, .mp2, and .mpv2)
- JPEG picture files (.jpg, .jpeg)
- GIF image files (.gif)
- TIFF image files (.tif, .tiff)
- Windows bitmap (.bmp)
- Windows metafile (.wmf)
- Portable Network Graphics image files (.png)

To view file types not in this list with WMC, you must convert the file to one of these supported formats.

Using Search

To find media, use Search (it's available in the following menus: TV + Movies, Music). Enter the search text using your keyboard or the numeric keypad on your remote, and select your show from the list. Windows Vista's WordWheel technology narrows your search with each letter or number you type. After you select the media you want to play, you can set up WMC to record the individual episode or the entire series (Movies + TV), or play, add to queue, or buy music (Music).

Using Tasks

Ready to shut down WMC? Need to tweak some settings? Want to burn a CD or DVD? Need to sync media to your WMC PC? Ready to add a Media Center Extender to your media empire? Want to dump the maximize/minimize buttons from the upper-right corner? It's time to open the Tasks menu.

The Shutdown menu brings most of the shutdown options available from the Start menu to the WMC interface (unfortunately, hibernate and switch user are not available).

Use the Settings menu to control how WMC works:

- General—Configures WMC settings that apply to all menus
- TV—Configures WMC settings for recording and viewing TV, using the Guide, closed-captioning and audio features, and TV signals
- Pictures—Configures slideshow settings
- Music—Configures visualizations and visualization options

To install additional visualizations, use Windows Media Center. For details, see "Using Visualizations," Chapter 8, p. 192.

- DVD—Configures DVD language, closed captioning, and remote control options
- Extender—Configures WMC Extenders (such as Xbox 360)
- Library Setup—Configures libraries to search for WMC-compatible content

To learn more about using Library Setup, see "Setting Up Media Libraries," this chapter, p. 224.

If you prefer to use your Windows Vista PC running WMC as an entertainment server, you can use WMC extenders such as the Xbox 360 to access WMC content on TVs throughout your home.

Burning a CD/DVD

You can start the CD/DVD burning process from many different menus. After inserting media, select the disc format you want to use. CD options include audio CD or Data CD. DVD options include data DVD, video DVD, or DVD slideshow. After you select the format you want to use, name the DVD. You can browse the following locations for media:

- Data CD or DVD—Recorded TV, Music Library, Picture Library, Video Library
- Music CD—Music Library
- Video DVD—Recorded TV, Video Library
- DVD slideshow—Music Library, Picture Library

As you select media, WMC keeps track of the space remaining on the media and displays the list after each selection. Use the Review and Edit List interface to change the name of any track, reorder tracks, remove an item, or clear the list.

NOTE

If you start the CD/DVD burn process from within the TV + Movies or Photos + Video menus, the item you select becomes the first item in the list to be burned. Click Add More to add additional files to the disc.

Click Burn (media) to burn the CD or DVD from your compilation. Click OK to return to WMC during the burn process. At the end of the process, you can burn another disc or close the process.

Synchronizing to a Device

You don't need to leave the friendly confines of WMC to synchronize music or other media to a removable device. Use the Sync option in the Tasks menu to set up synchronization. By default, existing playlists and ratings from Windows Media Player are selected for synchronization. Use the X button to clear unwanted media from the list, and click Add More to choose media from Pictures, Videos, or Recorded TV. Choose from various predefined searches, or choose any media. After reviewing the list, click Start Sync to perform synchronization. Click OK to close the progress bar and continue working in WMC.

Whether you're a TV-recording fiend, music maestro, or digital photo wiz, you'll find WMC makes it easier than ever to enjoy your favorite media. Get out from behind the desk, grab your remote, and sit back and enjoy digital goodness on your favorite big-screen TV and home theater system.

TIP

Use the rating feature in Windows Media Player or media explorers to rate your media. Use the predefined four-star/five-star searches in the Sync menu to automatically select your favorite media and save time in setting up synchronization.

Feature Rating: ***Windows Media Center***

Using the New Windows Movie Maker

Tired of enjoying somebody else's video creations in WMC? Thanks to Windows Movie Maker 6, you don't have to settle for watching the 99th rerun of *Celebrity Police Makeover* to get your video kicks: Make your own video, instead. I know what you're thinking: *Windows Movie Maker?* Yes, really: This ain't your father's (Windows XP-based) Windows Movie Maker.

Windows Movie Maker for Windows Vista (WMM 6) adds a lot of features to help you create videos you won't be ashamed to put on the big (HDTV) screen:

- Support for MS-DVR video created with WMC —Cut out commercials or create your own custom "TV mix" video.
- Import video clips in their original form—Large clips are no longer sliced into tiny sections; you decide how much (or whether) to trim a large clip down to size.

- More effects! More transitions!—More annoying punctuation!
- Output to more devices—Yes, you can finally make a DVD with Windows Movie Maker.
- Support for 16:9 widescreen aspect ratio—Your TV's widescreen, and so's your display: Shouldn't your video production tool be widescreen too?
- HDTV support up to 1080p, baby!—Leave no pixel behind!
- Support for HDV (high-definition video) media—Home Premium and Ultimate editions support the latest video format!

Windows Movie Maker and the WDDM

WMM 6 requires support for the new Windows Device Driver Model (WDDM) by your system's graphics card or onboard graphics. If your system lacks WDDM support, you can't run WMM 6. If your system can't run WMM 6, but you want to make movies, download and install Windows Movie Maker 2.6 from the Microsoft website.

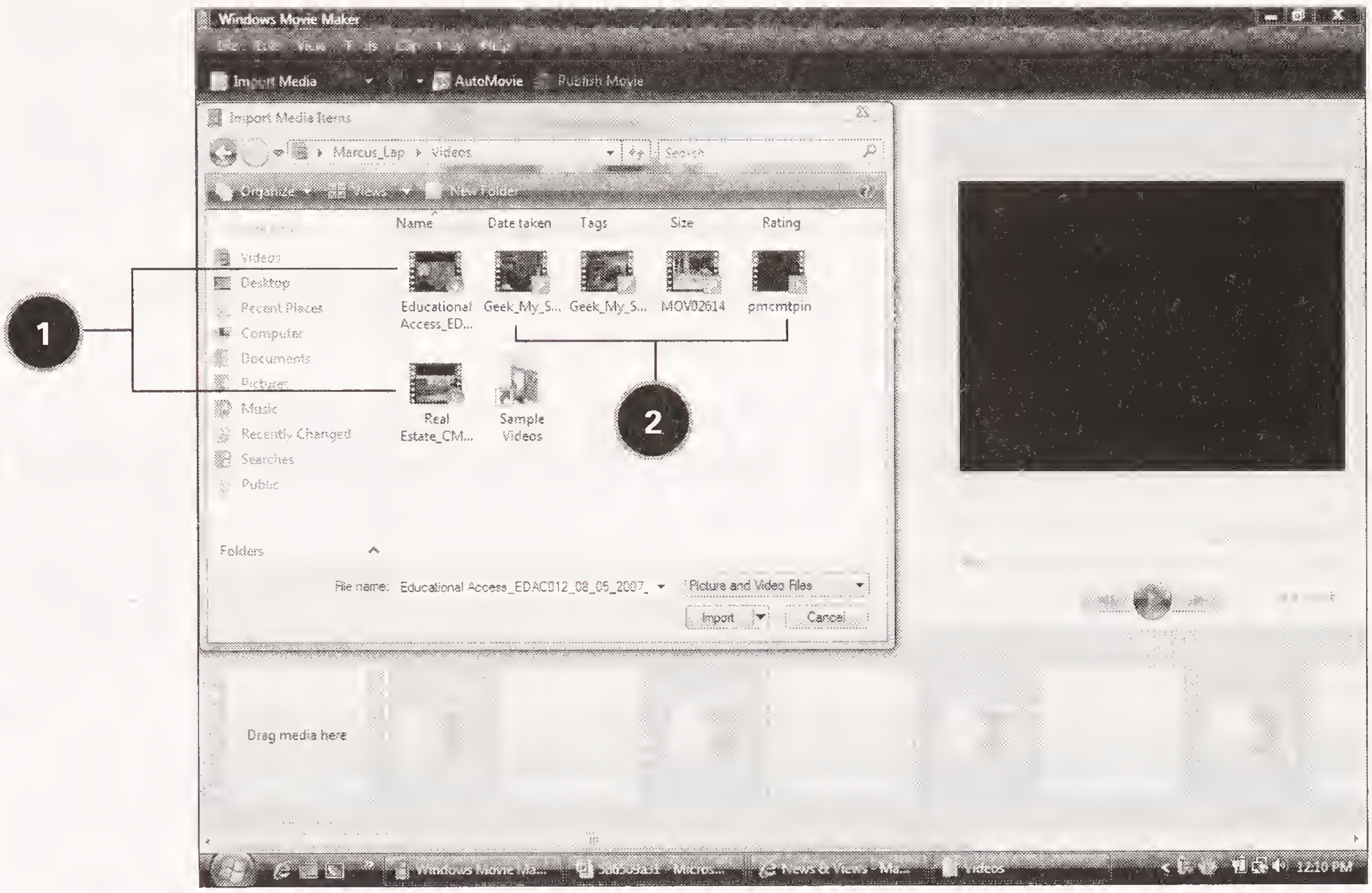
Here's the bad news: WMM 2.6 lacks support for MS-DVR files and other improvements in WMM 6 because it is essentially the same as Windows Movie Maker for Windows XP SP2. The good news: At least you can make movies. Learn more (and find a download link) at http://blogs.msdn.com/pix/archive/2007/04/25/movie-maker-2-6.aspx. To avoid the heartbreak of WMM 2.6, upgrade your system to a graphics card that supports WDDM display drivers. (If you can: If you're a laptop user, it's time to go shopping for a new one designed for Windows Vista.)

NOTE

Save disk space by importing your MS-DVR recordings and publishing them to WMV. Even if you don't cut a minute from the original recording, WMV DVD Quality provides visual quality virtually identical to MS-DVR at a fraction of the space. After you publish each recording, you can delete the original MS-DVR recording. Don't worry about your playback options, either: The WMV version works in both Windows Media Center and Windows Media Player.

Using Windows Movie Maker's New Features

Windows Movie Maker can show off its improved video-handling chops as soon as you start it up and import videos. Recordings made with WMC can be imported along with MPG and WMV video supported by Windows Media Player (see Figure 9.9).


Windows Movie Maker
Import Media
AutoMovie
Publish Movie
Import Media Items
Marcus_Lap
Videos
Search
Organize
Views
New Folder
Name
Date taken
Tags
Size
Rating
Videos
Desktop
Recent Places
Computer
Documents
Pictures
Music
Recently Changed
Searches
Public
Educational Access_ED...
Geek_My_S...
Geek_My_S...
MOV02614
pmcmtpin
Real Estate_CM...
Sample Videos
Folders
Picture and Video Files
Import
Cancel
Drag media here
1
2

File name: Educational Access_EDAC012_08_05_2007_

1 MS-DVR files

2 WMV or MPEG files

Figure 9.9

Preparing to import videos into Windows Movie Maker.

When you work with large clips, you will probably need to use WMM's split and trim features to specify which portion of a particular clip you want to use. The Split tool is located below the preview playback window, and the Trim tool is part of the top-level Clip menu (and requires you to switch to Timeline view).

Effects and transitions menus are similar to (though offering more options than) to previous editions. If you're in a hurry, consider using the AutoMovie feature to add one of several preconfigured combinations of effects and transitions to your clips. This option is not available after you add an effect or a transition to a project.

When it's time to publish your movie, this edition of WMM gives you new output options and more settings for old favorites. You can now create a DVD without needing to manually export video to a separate DVD mastering program: WMM saves your video and opens Windows DVD Maker to burn your DVD. You can also save your movie to a CD as a video file or as an attachment for email.

NOTE

Creating a widescreen movie? Set WMM to "think big" by opening the Tools menu and selecting Options. Select the Advanced tab and select 16:9 from the Aspect Ratio portion.

Want to change the duration of still images in your movie or transitions between scenes? Use the Default Durations portion of the Advanced tab to adjust timings.

When you select This Computer or Recordable CD as the target, you have many options to choose from:

- Best Quality for Playback On Your Computer—Creates a WMV file with a variable bit rate at 30fps (4:3 aspect ratio).
- Best Quality for Playback on a Recordable CD—Creates a WMV file with a 3.8Mbps bit rate at 30fps (4:3 aspect ratio).
- Compress to a Specified File Size—By default, WMV selects a file size created by a 3.6Mbps bit rate. Adjust the size of the file, and WMM reduces the bit rate, fps, and resolution (smaller file) or increases the bit rate (larger file). The highest bit rate available is 3.8Mbps, whereas the lowest is 187Kbps (160×120). Only 4:3 aspect ratios are available with this setting.
- More Settings (see Table 9.1)—Use this option to select widescreen aspect ratios or to prepare a file for playback on HDTV displays.

The aspect ratio of the finished movie depends on two factors:

- The Aspect Ratio selected through the Options menu (see Note)
- The publishing option you select

Table 9.1 WMM Movie Output Settings (for NTSC TVs)

Name	Bit Rate	Display Size	FPS	Aspect Ratio
DV-AVI	28.6Mbps	720×480	30	4:3
WMV DVD Quality	3.0Mbps	720×480	30	4:3
WMV DVD Widescreen Quality	3.0Mbps	720×480	30	16:9
WMV HD 720p	5.9Mbps	1280×720	30	16:9
WMV HD for Xbox 360	6.9Mbps	1280×720	30	16:9
WMV HD 1080p	7.8Mbps	1440×1080	30	16.9
WMV Portable device	1.0Mbps	640×480	30	4:3
WMV VHS quality	1.0Mbps	640×480	30	4:3
WMV Low-bandwidth	117Kbps	320×240	15	4:3

With the options offered by WMM, you can publish a video to virtually any device. For example, let's say you want to create a mash-up from your DVD library. MPEG-2 files on DVDs use the VOB file extension, not the MPG extension Windows Movie Maker expects. If the media is not copy-protected, copy the .vob files you need to your hard disk and change the file extensions to .mpg, and you can import them into WMM to get your mash-up started.

Windows Movie Maker for Vista isn't a huge departure from its predecessors, but it adds the features you need to make it compatible with today's MPEG-mad, HD-happening video world, all in a friendly and familiar interface.

Feature Rating: ***Windows Movie Maker***

TIP

If the disc is copy-protected (you'll see errors during the copy process on a copy-protected DVD), check out the forums and reviews at the *Maximum PC* website (www.maximumpc.com) for suggestions, warnings, and cautions.

Using Windows Photo Gallery

Windows Photo Gallery is the default program used to preview pictures in Pictures Explorer and elsewhere in Windows Vista. However, Photo Gallery provides many more features than its Windows XP predecessor, the Windows Picture and Fax Viewer:

- File management
- Simple photo editing
- Picture information
- Tagging and captioning
- Printing
- Email tools
- Data CD/DVD and video DVD burning
- Access to full-power photo-editing programs
- Tag, rating, and date-based picture organization tools
- Slideshow options

Opening Windows Photo Gallery

You can open Windows Photo Gallery (WPG) by right-clicking a photo and selecting Preview, or by opening the Start menu and selecting Windows Photo Gallery from the All Programs folder.

NOTE

Use the right-click method to edit or view properties for a particular picture. Use the All Programs menu method to view pictures by tags, dates, or ratings.

Working with an Individual Photo

When you open an individual photo in WPG's Preview mode, you have access to plenty of useful tools.

Use the File menu to perform standard file-management tasks (delete, rename, make a copy, copy, properties), to revert to a previous version of the picture (Windows Business, Ultimate, or Enterprise editions only), or to exit WPG.

The Fix menu includes surprisingly powerful photo editing options (although my favorite, the ability to adjust midtones, also known as gamma adjustment, levels, or histogram adjustment, is, sadly, not available), complete with real-time displays as you make adjustments:

- Auto Adjust—Automatically adjusts exposure, color, contrast, and brightness. Try it and see how it does. Your mileage will vary.
- Adjust Exposure—Brightness and contrast sliders.
- Adjust Color—Tweak the color temperature to fix photos taken with the wrong white balance, adjust the tint to create an other-worldly effect, and adjust saturation to punch up faded colors or create a black-and-white version from a color original.

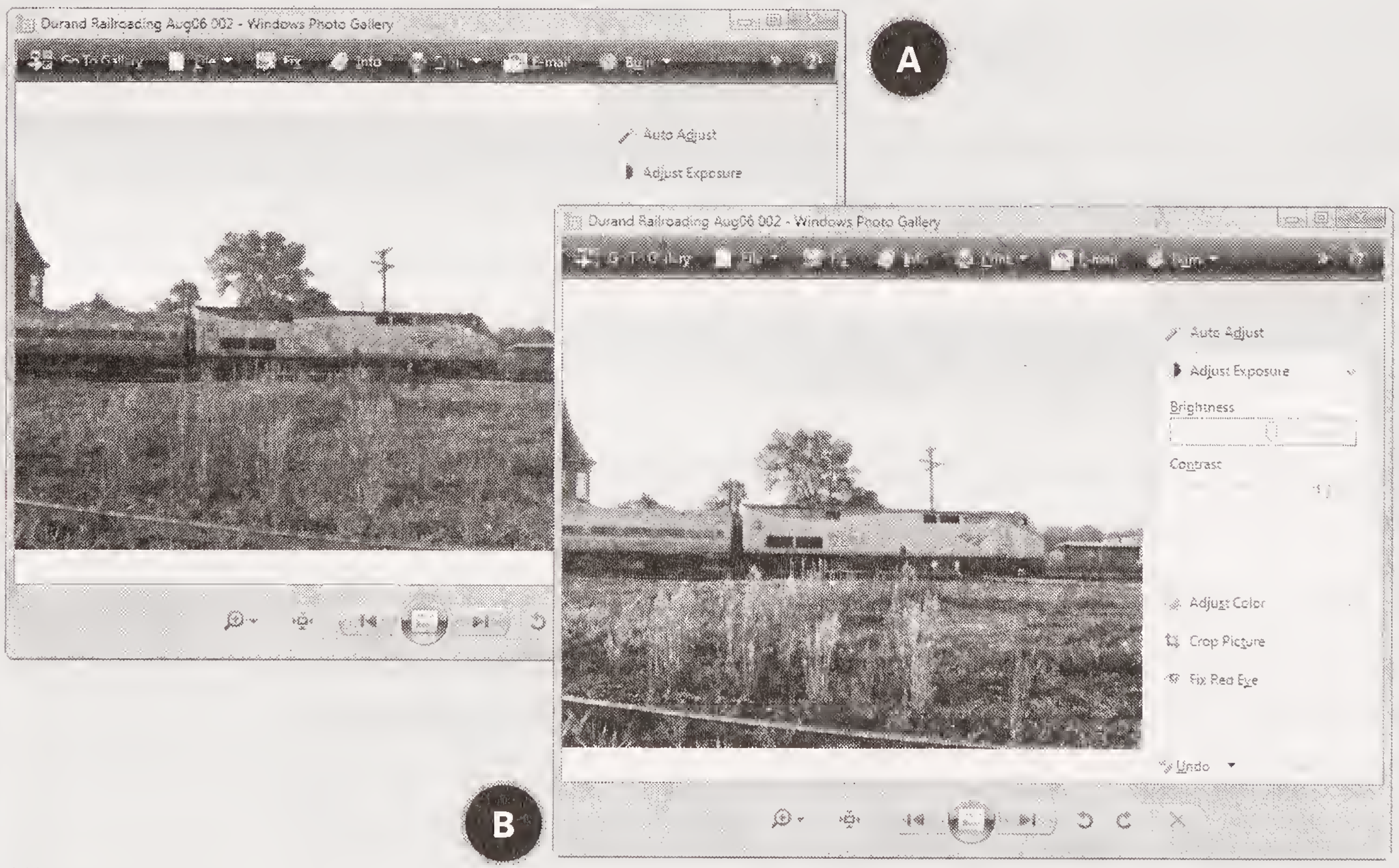
TIP

You can also revert to a previous version of a photo through its Properties menu. Select the Previous Versions tab to see whether a previous version is available.

Creating Great Black-and-White Photos

When you slide the saturation control all the way to the left, you have eliminated all the color from your color photo. Instant black-and-white! However, the result is usually a dull photo with lackluster contrast and tones.

To improve the tonal balance, adjust the tint and color temperature sliders; then finish the job with the Adjust Exposure contrast and brightness sliders. See Figures 9.10 A and 9.10 B to see what a difference these settings can make.


Durand Railroading Aug06 002 - Windows Photo Gallery
Auto Adjust
Adjust Exposure
A
Durand Railroading Aug06 002 - Windows Photo Gallery
File
Fix
Info
Print
E-mail
Burn
Auto Adjust
Adjust Exposure
Brightness
Contrast
Adjust Color
Crop Picture
Fix Red Eye
Undo
B

A Original conversion from color using only the Saturation tool.

B Optimized conversion after using tint, color temperature, brightness, and contrast tools.

Figure 9.10

Adjusting black-and-white photos.

- Crop Picture—It's a TV world, and WPG lives in it, giving you 16×9 and 4×3 cropping options for HD and traditional TVs, as well as classic photos sizes (8×10, 5×7, 4×6, 3.5×5), square, 8.5×11 full-paper size, custom, and original. Use the Rotate button to turn the cropping frame as needed.
- Fix Red Eye—Kills red-eye, fast! Just draw a rectangle around each eye, click Apply, and red-eye's gone, just like that.
- Undo/Redo—Realize you've gone an edit too far? Can't remember how you got here? Use Undo to go "back, back in time" until you're satisfied with your changes (or back to your original). Use Redo to move forward, step by step.

Display photo information (date taken, rating, size, dimensions) and add tags or captions with the Info button.

The Print menu includes the outstanding Print Pictures Wizard and access to commercial photo printers such as Kodak, HP's Snapfish, and many others.

➪ To learn more about using the Print Pictures Wizard, see "Previewing and Printing Photos," Chapter 5, p. 102.

Use the Email button to resize your photo for emailing and to attach it to a message. You can choose from four sizes (smaller, small, medium, and large); selecting Original attaches your photo to a message but does not edit it. The dimensions and estimated size are shown for all sizes except original, which shows the estimated size only.

Although the Email button is a fast way to resize images for emailing and doing the attachment for you, you can get greater size reductions by using a photo editor.

The Burn button provides two options: Burn a data disc (CD or DVD), or create a video DVD using Windows DVD Maker. You are prompted to add more images as desired when you select the video DVD option, but if you select the burn a data disc option, the only file burned to the disc is the current file. To burn multiple files to a data disc, start the process from WPG's explorer view or from Pictures Explorer.

The Make a Movie button opens Windows Movie Maker and imports your picture. Add additional pictures or videos, transitions, or effects as desired.

➪ To learn more about burning a data disc, see "Burning a Data CD or DVD," Chapter 13, p. 312.

TIP

I recommend using the Info button to add captions, but not to add tags. You can't see existing tags used for other pictures, and the only way to add a tag is to type it. That gets mighty old when you're tagging hundreds of vacation pictures!

To add a tag to a group of photos, use the Go to Gallery or Back to Gallery button to open the Gallery's navigator view and drag pictures to an existing tag, or create a new tag and then drag pictures to it.

TIP

If you require a separate photo editor, I recommend Adobe Photoshop Elements' Save for Web option, which enables you to resize your image and adjust image quality, while providing you with a real-time comparison between the original and optimized image. Save for Web also saves the image to disk, so you can attach it to a message whenever you want or upload it to a website.

➪ To learn more about Windows DVD Maker, see "Burning a Video DVD," Chapter 13, p. 316.

➪ To learn more about using Windows Movie Maker, see "Using the New Windows Movie Maker," this chapter, p. 235.

Although Windows Photo Gallery offers a lot of photo editing power, you may need to make edits beyond its capabilities. Use the Open menu to select from other photo-editing programs on your system (including, alas, the way-underpowered Windows Paint program).

Use the toolbar at the bottom of the WPG window to zoom the picture, switch between the standard and zoomed views, move to the next or previous photo, start a slideshow, rotate the picture, or delete the picture.

Working with Your Photo Collection

Click Go to Gallery or Back to Gallery to open WPG's Gallery view of your picture collection. This view supplements the traditional folder-based way of organizing photos with views based on categories such as tags, ratings, and dates taken. Select any of the views in the left pane to view matching photos.

TIP

You can also use the Gallery view to organize videos. Select Videos from the All Pictures and Videos section of the left pane, click Info, and you can view properties for the video.

Whatever view you select, you can get more information about a picture or video by hovering your mouse over it (see Figure 9.11). An enlarged thumbnail pops up, displaying the filename, date of last modification, size on disk, rating, and tags (photos also display dimensions).

The same menus, buttons, and toolbar available in the individual photo view are available in the Gallery view, along with a Thumbnail View button that switches between traditional thumbnails, thumbnails with text (date/time of last edit), and tiles (thumbnails with filename, date/time, size on disk, dimensions, star rating, and caption).

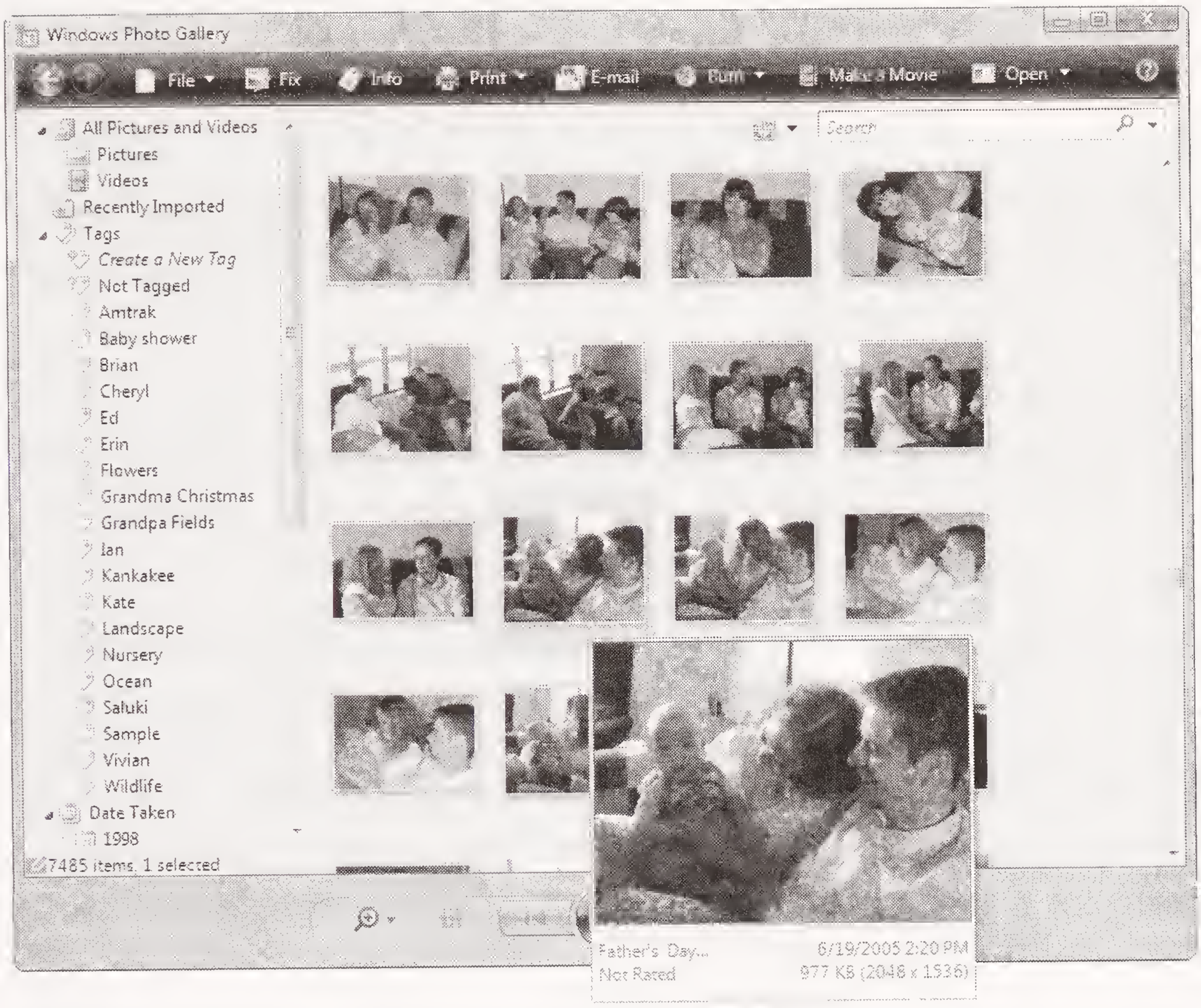

Windows Photo Gallery
File
Fix
Info
Print
E-mail
Burn
Make a Movie
Open
Search
All Pictures and Videos
Pictures
Videos
Recently Imported
Tags
Create a New Tag
Not Tagged
Amtrak
Baby shower
Brian
Cheryl
Ed
Erin
Flowers
Grandma Christmas
Grandpa Fields
Ian
Kankakee
Kate
Landscape
Nursery
Ocean
Saluki
Sample
Vivian
Wildlife
Date Taken
1998
7485 items, 1 selected
Father's Day...
Not Rated
6/19/2005 2:20 PM
977 KB (2048 x 1536)

Figure 9.11

Organizing photos with Windows Photo Gallery's Gallery view.

Windows Photo Gallery borrows ideas from the best third-party photo organizing tools (hey, Adobe, are you listening?) and adds a few tricks of its own to make it easy to keep your expanding photo and video collection organized.

👍 *Feature Rating:* ***Windows Photo Gallery***

Best and Worst Practices for Media Tools

Windows Media Center, Windows Movie Maker, and Windows Photo Gallery provide powerful ways to enjoy and edit your media. Use the suggestions in the following sections for maximum enjoyment (and minimum trouble) with your media recordings and creations.

TIP

Add tags to particular photos or videos by creating tags in the left pane and dragging selected pictures or videos to the tag. To add multiple tags to videos or photos, repeat the process.

To rate your photos or videos, you can select ratings for individual photos and videos in the Info panel at right, or select a group and drag them to the appropriate rating in the left panel.

Windows Media Center Best and Worst Practices

- No matter how much of a hurry you are to start using WMC, take a few minutes to set it up, especially if you're using it with a TV in addition to (or instead of) a regular display.
- Make sure you have a reliable Internet connection (preferably an always-on broadband type) if you plan to record TV. Your computer will automatically connect to the Internet to get updates to the program guide, and those updates will help ensure you don't miss an episode.
- Mortgage your hotel on Boardwalk and Park Place or sell your collection of Joe Shlabotnik baseball cards, but whatever it takes, get your hands on the biggest hard disk you can afford if you want to record TV series. WMC's MS-DVR recording format isn't the most efficient format around, and even a few episodes of *CSI: Miami* or *The Tonight Show* can put a strain on a small hard disk. Get a 500GB or larger drive, and breathe a little easier.
- Don't assume that WMC will use your new hard disk automatically. You must use the Recorder Storage menu in the TV section of the Settings menu to point to your new hard disk. If you don't, all that digital storage goodness will be ignored by WMC, and it will continue to fill up your system drive until you're out of space.
- Before you select a lower-quality recording format for a series, record a few minutes of TV at different quality settings (change settings through the Settings menu). You may be satisfied with lower quality for episodes you will watch once and then discard.
- Don't assume that leaving your computer on all the time is all it takes to record your favorite TV programs. Windows Update or Microsoft Update may restart your system after installing some types of updates, causing you to miss your favorite episode of *World's Wildest Police Chases*. To get all the updates without restarting your computer automatically, configure Windows Update to download updates automatically, but let you choose when to install them.

Windows Movie Maker Best and Worst Practices

- Save your project as soon as you import clips. If you have a system problem, you won't need to start the project from scratch.

- Don't try to make up for poor video with effects. Instead, use effects sparingly to make your movie more effective.
- Don't go overboard with transitions. Instead, select transitions that enhance scene changes without drawing undue attention to themselves.
- Not sure what combination of effects and transitions is most effective? Try some of the AutoMovie editing styles. If you're satisfied, you've saved yourself a lot of time, and in any event, you've learned what AutoMovie can—and can't—do.
- Be sure to preview your movie—often—as you edit it. The preview window does a good job of showing you how effects and transitions affect your film.
- Worried about differences in video quality in different clips? Right-click a clip and select Properties to view its video, audio, source file, and duration information.

Windows Photo Gallery Best and Worst Practices

- Make sure your display is properly calibrated before you start making photo edits. If your display driver or photo editor includes a calibration (gamma) utility, use it to fine-tune brightness and contrast settings.
- If you are using home editions of Windows Vista, these editions don't have the shadow copy feature (the Previous Versions tab in the file properties sheet) to retain older versions of edited photos. Make sure you run File and Folder Backup before you edit photos, or make a copy of photos you want to change and edit the copy. Don't wipe out the original version of your photo—your changes might not be improvements!
- Don't use filenames as a substitute for tags. It's a lot easier to create tags and apply them to photos than it is to rename each photo with all the subjects. Try doing that with your 10th anniversary college or high school reunion group photo!
- Don't panic if you can't fix a photo in Windows Photo Gallery: The Fix menu is designed for use with JPEG photos. If the picture is a TIF file, you can open it with Windows Paint and save it as a JPEG. If the picture is a RAW file, use the camera vendor's own conversion utility or a third-party program such as Adobe Lightroom to convert the picture.
- Can't find your pictures? Use the Search tool at the top of the Gallery view to find pictures by filename or tag.

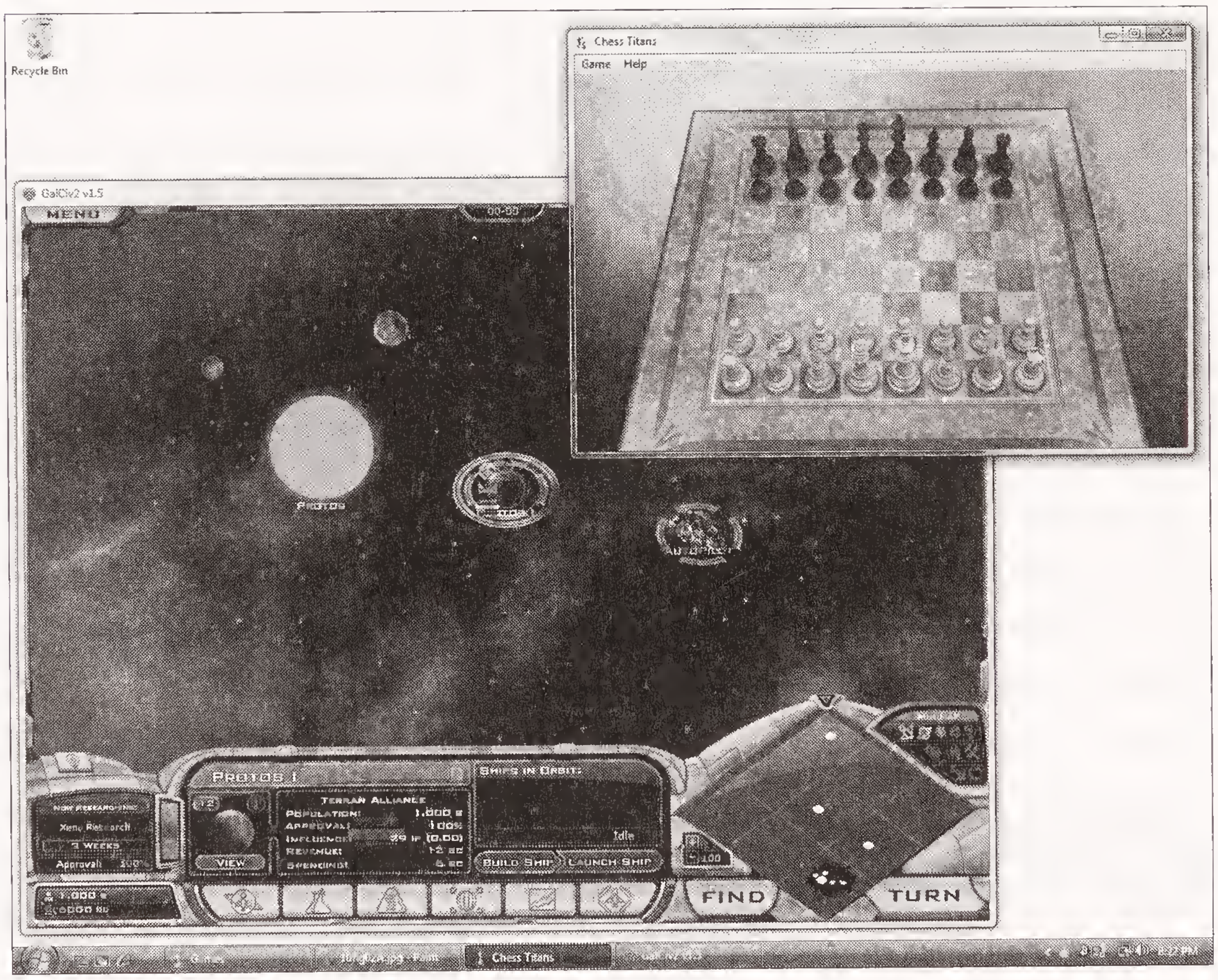
Chapter Ten

Gaming with Windows Vista

IN THIS CHAPTER

- How Windows Vista Improves the Gaming Experience
- Playing Games Through the Games Explorer
- DirectX 10, the Future of Windows Gaming
- Dealing with Limited 3D Driver Settings
- Solving Problems with Gaming Audio
- Solving Problems with Legacy Games
- Gaming Tips and Tricks

How Windows Vista Improves the Gaming Experience


Recycle Bin
Chess Titans
Game Help
GalCiv2 v1.5
MENU
PROTOS
FIND
TURN
Chess Titans

PC gaming is becoming a bigger and bigger chunk of the Windows universe, so Windows Vista incorporates new features to help you make your game experience more organized and more fun. In this chapter, we'll learn about Vista's new and improved game-oriented features, including

- Games Explorer
- Gaming and Parental Controls
- Standard and 3D bundled games

- The Windows Experience Index (WEI) and game Performance
- DirectX 10
- OpenAL 3D audio
- The Compatibility Wizard
- Support for retro gaming with Virtual PC 2007

Playing Games Through the Games Explorer

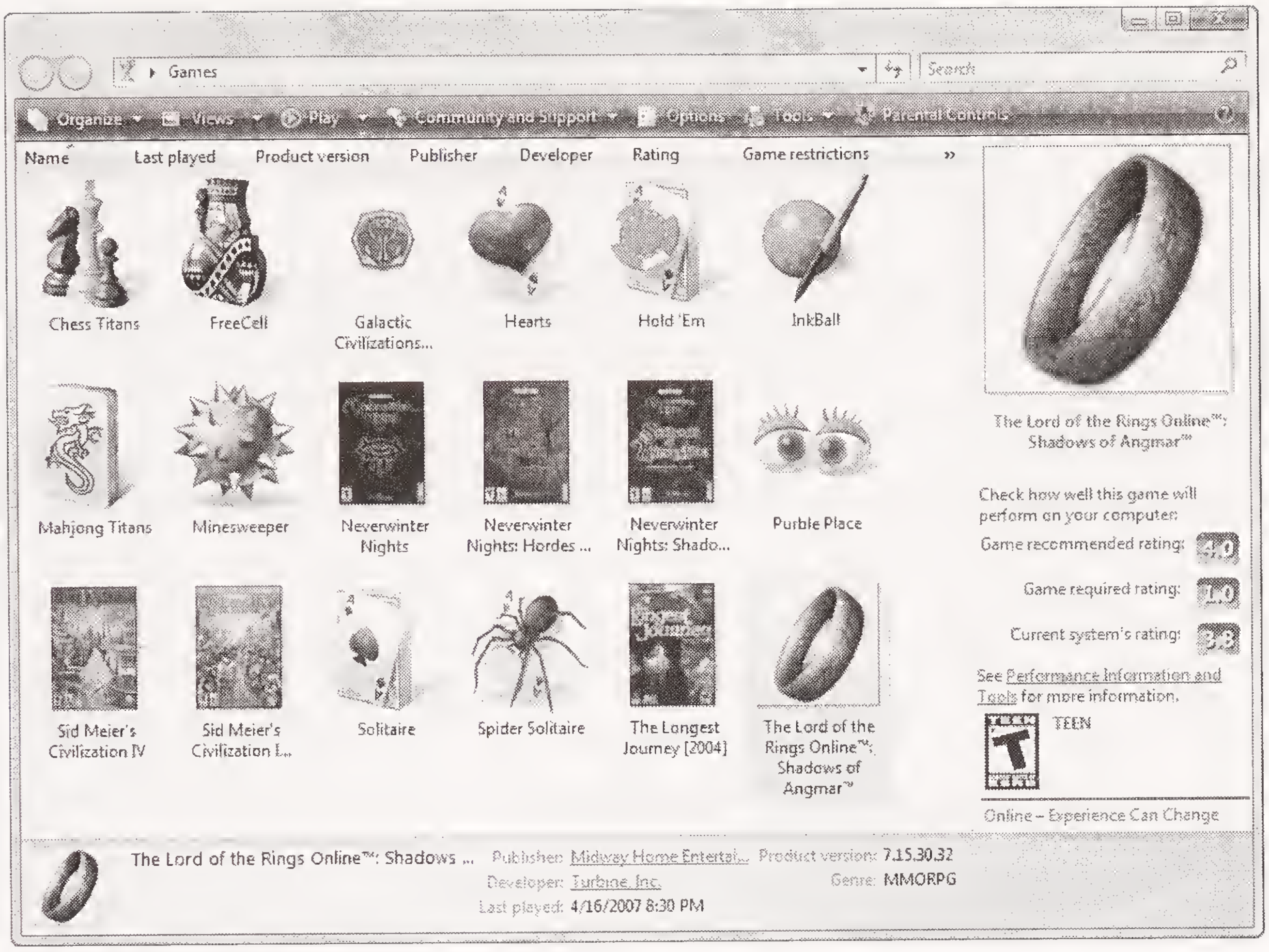
For the first time, Windows games have a real home base on the Windows desktop, thanks to the brand-new Games Explorer. Although previous versions of Windows featured a Games folder on the Start button, there was no mechanism built into Windows to require games to use the Games folder for startup, no way to control game access by ESRB ratings, and no way to organize saved games to make it easy to pick up a game where you left off. Games Explorer changes all that in a variety of ways:

- It provides a dedicated folder for viewing and accessing installed games.
- It features various ways to classify and organize games.
- It enables families to control access to games by rating and by user.

After additional games are installed, the Games Explorer on a typical system resembles Figure 10.1. However, the exact collection of games provided with Windows Vista depends on the edition of Windows Vista you're using: Home Premium and Ultimate editions include nine games, whereas Home Basic (which does not support the 3D Aero interface) does not include the 3D Chess Titans and Mahjong Titans games shown in Figure 10.1. The Hold 'Em game shown in Figure 10.1 is a Windows Vista Ultimate Extra, available (via download) only to Vista Ultimate edition users.

TIP

By default, Windows Vista Business edition doesn't display games. However, the feature isn't missing from the Windows installation, but is merely disabled. To enable or disable games, open Control Panel, Programs, and the Programs and Features applet. Select the Turn Windows Features On and Off task from the task pane (this feature is protected by User Account Control). To display all games included with your Windows edition, click the Games check box. To enable or disable certain games included with Windows, expand the Games category and clear (to disable) or check (to enable) the games listed. Click OK to close the dialog and accept changes.


Games
Search
Organize
Views
Play
Community and Support
Options
Tools
Parental Controls
Name
Last played
Product version
Publisher
Developer
Rating
Game restrictions
Chess Titans
FreeCell
Galactic Civilizations...
Hearts
Hold 'Em
InkBall
Mahjong Titans
Minesweeper
Neverwinter Nights
Neverwinter Nights: Hordes ...
Neverwinter Nights: Shado...
Purble Place
Sid Meier's Civilization IV
Sid Meier's Civilization I...
Solitaire
Spider Solitaire
The Longest Journey [2004]
The Lord of the Rings Online™: Shadows of Angmar™
TEEN
T

The Lord of the Rings Online™: Shadows of Angmar™

Check how well this game will perform on your computer:

Game recommended rating: 4.0

Game required rating: 1.0

Current system's rating: 3.8

See Performance Information and Tools for more information.

TEEN

Online – Experience Can Change

The Lord of the Rings Online™: Shadows ...

Publisher: Midway Home Entertai...

Developer: Turbine, Inc.

Last played: 4/16/2007 8:30 PM

Product version: 7.15.30.32

Genre: MMORPG

Figure 10.1

The Games Explorer.

Although the Games Explorer features the same Preview and Details pane options (enabled by default) as other Explorer views and a wide variety of views from Extra Large Icons to Details, the Games Explorer is customized for the needs of PC gamers:

- The default layout's Preview pane displays the system's current Windows Experience Index (WEI) base score when no game is selected or the selected game's WEI score and ESRB rating (if available).

⇨ For more information about common Explorer features, see Chapter 5, "Vista Tools for Faster and Better File Organization."

⇨ To learn more about Performance Information and the Windows Experience Index, see "Performance Information and Tools," Chapter 6, p. 129.

- The Details pane displays the game publisher, developer, version number, and genre.
- The Details view displays the last date the game was played, the product version, the publisher, the developer, the ESRB rating, game restrictions, and content descriptions.

NOTE

The Entertainment Software Rating Board (ESRB) is a nonprofit, self-regulatory organization that rates console and PC games. You can learn more about ESRB and its rating system at http://www.esrb.org.

NOTE

To hide a game, right-click it and select Hide This Game. Hiding a game is useful for eliminating duplicate entries or games you don't want to play right now (but don't want to uninstall, either).

- The Options button enables you to configure the Games folder. Options include downloading information about installed games, listing the most-recently played games, clearing gaming history, and unhiding games.
- The Tools menu provides links to a variety of Windows features to configure the computer and enhance game play.
- The Parental Controls button opens the Parental Controls feature, enabling you to control access to games by user and by ESRB rating.

For more information about using Parental Controls, see "Using Parental Controls," Chapter 14, p. 333.

Adding Games to Games Explorer

As you install additional games on your system, Games Explorer may automatically update to show them, or it may be necessary to manually add shortcuts for some games.

TIP

You can restrict particular users from playing a game, even if Games Explorer doesn't recognize its ESRB rating, by using Parental Control's Allow and Block Specific Programs feature. See Chapter 14, "Protecting Windows Vista," for details.

A game that's fully compatible with Games Explorer displays the game's ESRB rating, the WEI rating recommended for the game, the WEI rating required to play the game, and the system's current WEI rating).

A game that's partly compatible with Games Explorer displays the game's ESRB rating (see Figure 10.2). However, it's up to you to determine how well it works with your system (many games from major vendors produced during the last few years fall into this category).

Some games, such as games without ESRB ratings, games bundled with hardware, and free demos (such as those provided on the MaximumPC CD) may ignore Games Explorer. You can add these games to Games Explorer by dragging the game's shortcut into each user's Games Explorer. However, they won't display any additional information, and you can't restrict play by ESRB rating (see Figure 10.2).

To learn more about DirectX Diagnostics, see the Note on p. 257, this chapter.

Games for Windows and Games Explorer Compatibility

Games that are specifically designed for Windows Vista include a Game Definition File (GDF), which is XML metadata that provides the thumbnail used in Games Explorer, the ESRB rating, and, when available, the recommended and required WEI rating for the game. The GDF and the bitmap used to identify the game must be embedded into the game's executable file. Consequently, a game vendor must write the game specifically for Windows Vista or create a game patch for an older game that incorporates these features.

Microsoft, in cooperation with other major PC gaming vendors (ATARI, LucasArts, Midway, Turbine, 2K Games, THQ, and others), has introduced the Games for Windows brand. Games for Windows feature packaging with the Games for Windows banner across the top of the box (reminiscent of the Xbox 360's packaging, but using a white background). Games for Windows are designed for Windows XP and Vista only (including 64-bit editions) and feature easy installation, support for 1280×720 and 1152×720 widescreen displays, support for the Xbox 360 common controller (for games that use controllers), support for launching from Media Center, support for DirectX 9's Direct3D (if the game uses Direct3D), and compatibility with Games Explorer (including parental controls). For more details, see http://msdn2.microsoft.com/en-us/library/bb173456.aspx.

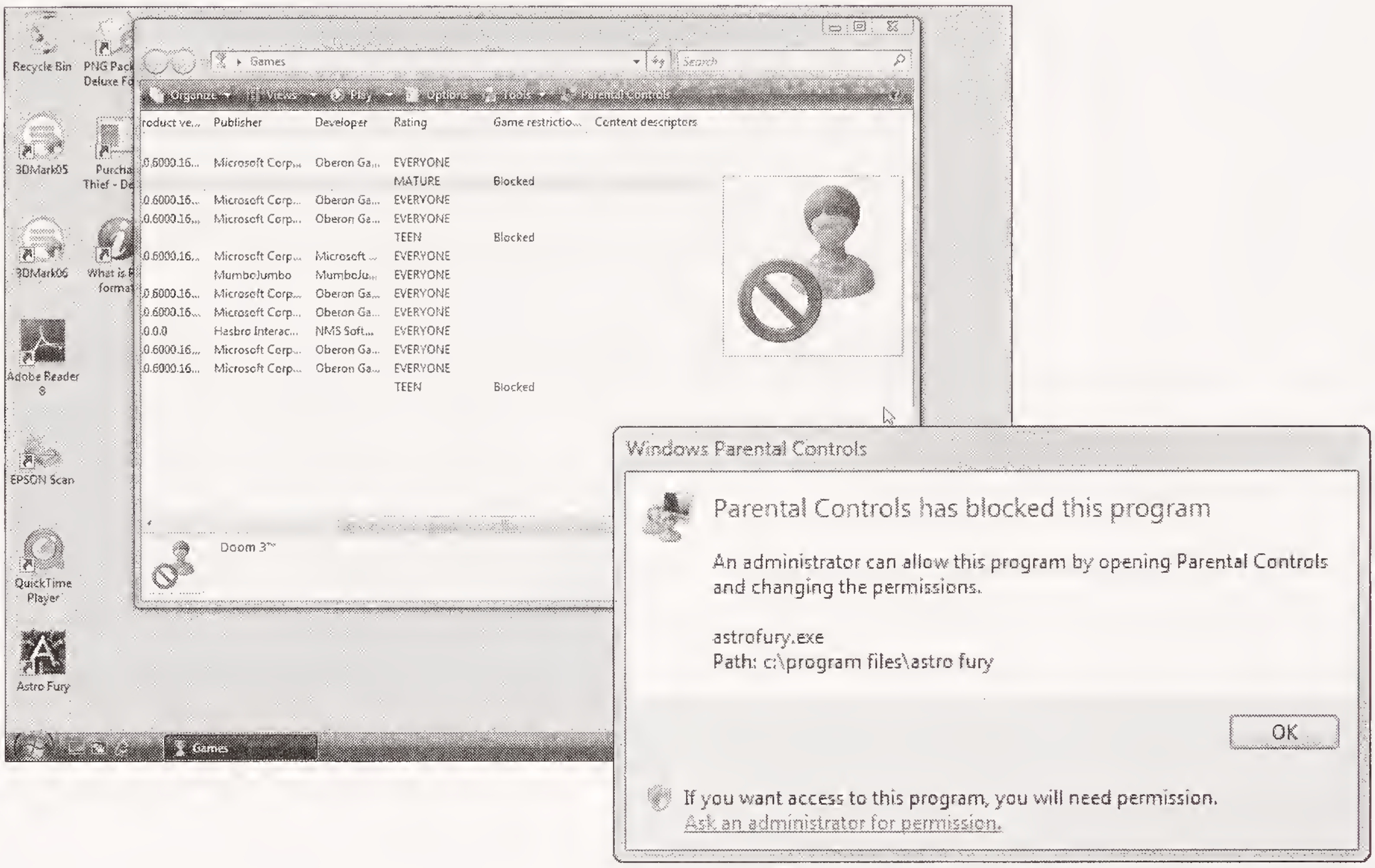
Games listed in the Games for Windows catalog (available at www.gamesforwindows.com) will automatically be added to the Games Explorer. However, depending on the game, WEI information might not be available.

Games that contain ESRB ratings may automatically add themselves to Games Explorer, even if they are several years old.

Working with ESRB Ratings

As Figure 10.1 shows, many recent games include ESRB ratings. If Games Explorer displays the rating, the rating is visible in the Preview pane when you select the game. To see the ratings for all games in Games Explorer, select the Details view from the Views menu. Scroll to the right to see the rating and the content descriptors for a particular game.

If you use ESRB ratings to block games for a particular user, that user's Games Explorer will not display the content descriptors for blocked games, puts Blocked in the Game Restrictions column, and displays a generic "No" icon instead of the normal game icon. If you block a game using Parental Control's Allow and Block Specific Programs feature, a pop-up warning is displayed when the user tries to run the blocked game (see Figure 10.2).



roduct ve...	Publisher	Developer	Rating	Game restrictio...	Content descriptors
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
			MATURE	Blocked	
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
			TEEN	Blocked	
0.6000.16...	Microsoft Corp...	Microsoft ...	EVERYONE		
	MumboJumbo	MumboJu...	EVERYONE		
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
0.0.0	Hasbro Interac...	NMS Soft...	EVERYONE		
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
0.6000.16...	Microsoft Corp...	Oberon Ga...	EVERYONE		
			TEEN	Blocked	

Windows Parental Controls

Parental Controls has blocked this program

An administrator can allow this program by opening Parental Controls and changing the permissions.

astrofury.exe
Path: c:\program files\astro fury

OK

If you want access to this program, you will need permission.
Ask an administrator for permission.

Figure 10.2

The pop-up message triggered by Allow and Block Specific Programs.

WEI Ratings and Vista Gaming

NOTE

The highest possible rating for any subsystem when Vista was released was 5.9; higher ratings will be established as newer, faster components are released in 2007 and beyond.

Any game that is fully compatible with Games Explorer displays several Windows Experience Index (WEI) ratings in its Preview pane (refer to Figure 10.1). For the best game-play experience, the game recommended rating should be less than or equal to the current system's rating. However, as long as the current system's rating is at least equal to the game's required rating, you can play the game satisfactorily. If the rating falls below the game's requirements, you can still play it, but if you don't like it, tough!

The WEI base score is generated automatically when you first install Windows Vista and can be updated whenever internal system hardware, such as a new graphics card, more RAM, or a new hard disk, is installed.

As you've probably figured out by now, Windows Vista's favorite letters are "X M L." So, it's not surprising to discover that the WEI ratings are stored as .xml files. Where are they? You'll find them in C:\Windows\Performance\WinSAT\Datastore.

If you run Performance Information and Tools to update the WEI base score after a hardware or driver upgrade, be sure to close the System properties sheet and reopen it to refresh the WEI base score display with the latest information.

➪ To learn more about how Performance Information and the Windows Experience Index work, see "Performance Information and Tools," Chapter 6, p. 129.

TIP

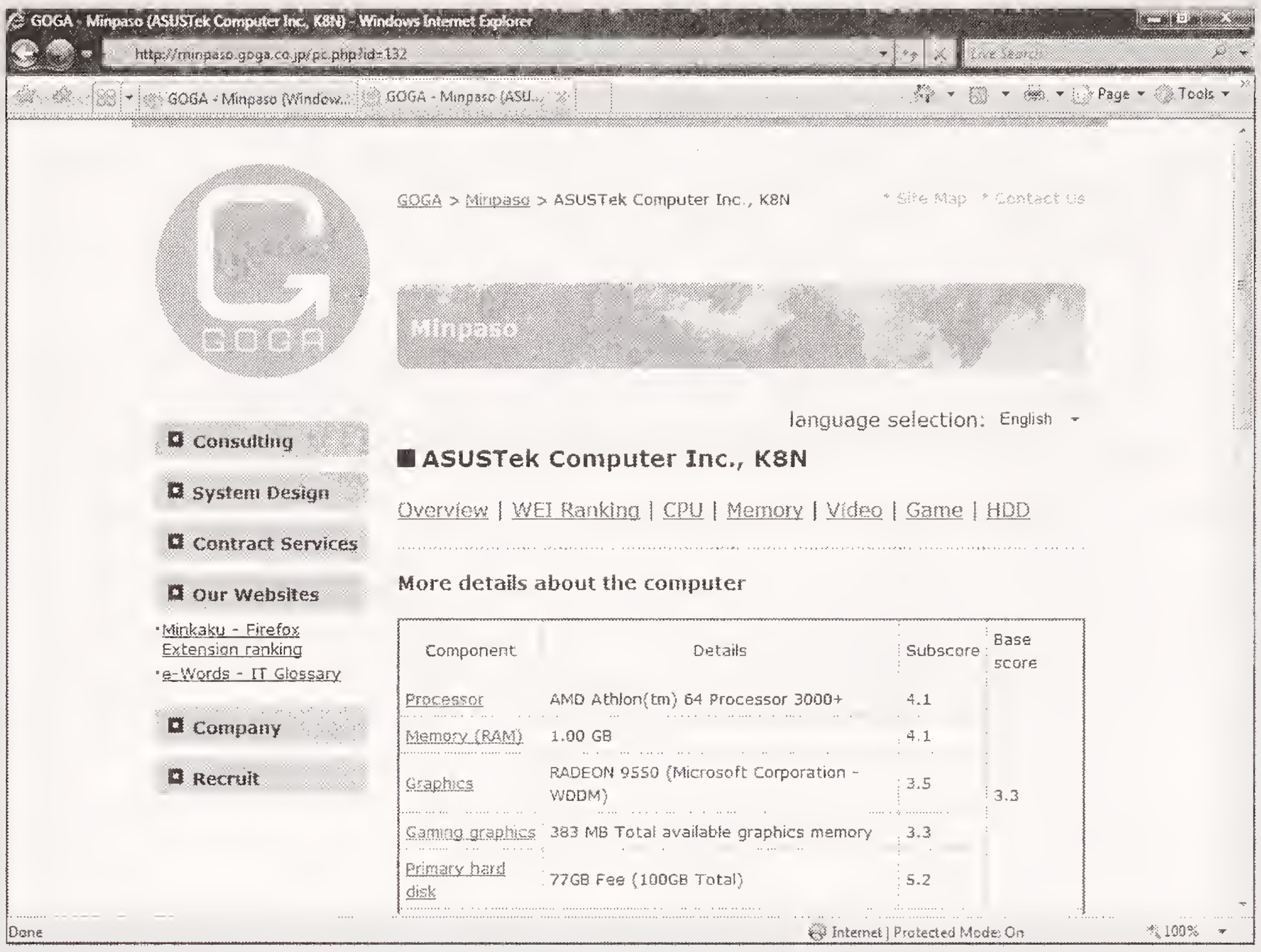
The use of ReadyBoost, which uses a USB flash memory drive to boost hard disk performance through disk caching, isn't reflected in WEI scores. However, if your game performs a lot of disk access, ReadyBoost can help your real-world performance. To learn more about using ReadyBoost, see Chapter 6, "Mastering Your Hardware and Environment with Vista."

Minpaso Shows You How to Win

The Goga Minpaso website at http://minpaso.goga.co.jp/ offers a downloadable Windows Sidebar gadget that collects WEI information from your system using WinSAT and adds it to an online database you can search by product name, processor name, GPU name, and in many other ways. You can also review the highest scores in each category. By looking up systems with the highest WEI rankings in each category and clicking the system to determine the hardware in use, you can quickly determine what hardware has been tested to provide the best performance according to WinSAT and the WEI. Figure 10.3 shows how Minpaso displays the hardware in my FrankenPC custom-built computer before I upgraded to a faster graphics card.

A review of the Minpaso database reveals these clues to world-beating dominance (scores of 5.0 or higher in each category):

- Use graphics cards based on PCI-Express x16 and the brand new DirectX 10-compatible GPUs available from NVIDIA (GeForce 8 series) or AMD's ATI division (X2xxx, also known as the R600 GPU family) to achieve best-in-class gaming and Aero graphics scores and to be ready for the amazing realism that DirectX 10 (available only for Windows Vista) provides. If you're on a budget and don't mind sticking with DirectX 9 for now, consider nVIDIA's GeForce 7 series or ATI's X19xx or X18xx series cards.


GOGA - Minpaso (ASUSTek Computer Inc., K8N) - Windows Internet Explorer
http://minpaso.goga.co.jp/pc.php?id=132
Live Search
GOGA - Minpaso (Window...
GOGA - Minpaso (ASU...
Page
Tools
GOGA
Minpaso
Site Map
Contact Us
Consulting
System Design
Contract Services
Our Websites
Minkaku - Firefox Extension ranking
e-Words - IT Glossary
Company
Recruit
Done
Internet | Protected Mode: On
100%

GOGA > Minpaso > ASUSTek Computer Inc., K8N

language selection: English

■ ASUSTek Computer Inc., K8N

Overview | WEI Ranking | CPU | Memory | Video | Game | HDD

More details about the computer

Component	Details	Subscore	Base score
Processor	AMD Athlon(tm) 64 Processor 3000+	4.1	3.3
Memory (RAM)	1.00 GB	4.1	
Graphics	RADEON 9550 (Microsoft Corporation - WDDM)	3.5	
Gaming graphics	383 MB Total available graphics memory	3.3	
Primary hard disk	77GB Fee (100GB Total)	5.2	

Figure 10.3

- Quad-core CPUs from Intel or fast dual-core CPUs from either Intel or AMD dominate systems with top processor scores. The fast single-core AMD Athlon 64 FX-7x series and the dual-core AMD Opteron and Intel Xeon workstation processors are also represented in the fastest processors tested.
- Lots of RAM (2GB or greater) is the key to a high memory score.

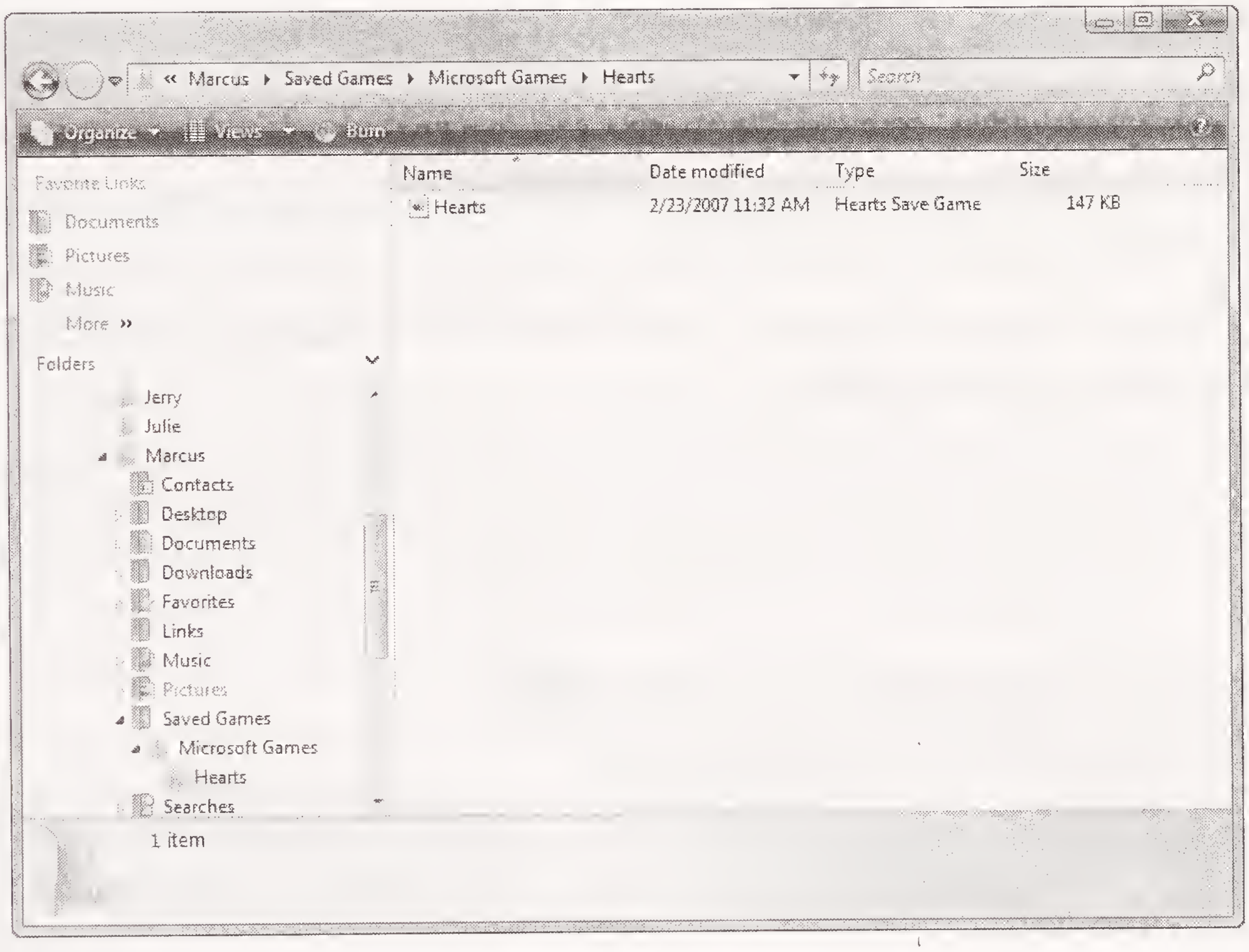
For more about DirectX 10's new features, see "DirectX 10, the Future of Windows Gaming," p. 257, this chapter.

Playing and Managing Games

You can launch any game listed in Games Explorer by double-clicking it. However, by right-clicking a game, you can take advantage of many additional features that vary by game:

- Home Page—This option's a bit misleading. It may open the Games for Windows home page or the game's specific home page.

- Support—Opens the support page provided by the game vendor. In the case of a bundled game, you'll go straight to the main Microsoft Help and Support page.
- Saved Games—Some games include a Save option. Select this option, and you navigate to the Saved Games folder for the current user (see Figure 10.4). Select the game you want to continue, and it starts from where you left off.


« Marcus ▸ Saved Games ▸ Microsoft Games ▸ Hearts
Search
Organize
Views
Burn
Favorite Links
Documents
Pictures
Music
More »
Folders
Jerry
Julie
Marcus
Contacts
Desktop
Documents
Downloads
Favorites
Links
Music
Pictures
Saved Games
Microsoft Games
Hearts
Searches
1 item

Name	Date modified	Type	Size
Hearts	2/23/2007 11:32 AM	Hearts Save Game	147 KB

Figure 10.4

Retrieving a saved game.

- Pin to Start Menu—Why waste time opening the Games Explorer? Save a couple of clicks.
- Add to Quick Launch—Select this option, and you won't even need to use the Start menu to launch your game.
- Hide This Game—Some games install two icons in Games Explorer. Use this option to hide any additional games, or to declutter Games Explorer by hiding games you prefer not to play.
- Customize—Select this option and you can configure how the game is played.

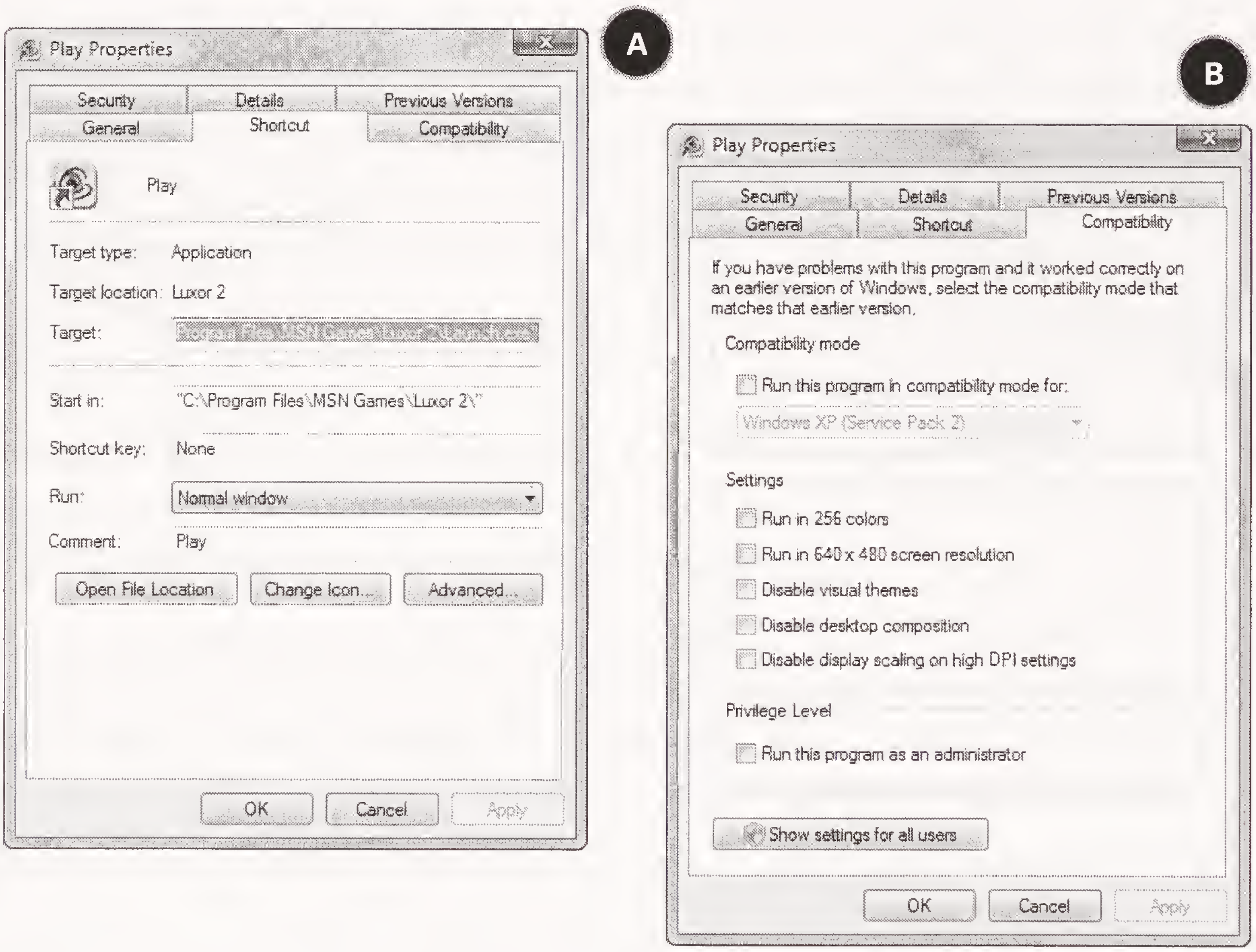
Note that when you select the Customize option from the right-click menu a Customize menu appears. To change how your game plays, select Play (the first option) and click Edit. This brings up the Play properties sheet for your game.

Use the Shortcut tab (see Figure 10.5 A) to specify whether to run the game maximized or in a window, change the game's icon, or assign the game a shortcut.

If you have problems running the game, open the Compatibility tab (see Figure 10.5 B). If the game was written for an older version of Windows, click the Run This Program in Compatibility Mode For check box and select the appropriate version of Windows. Use other settings as appropriate. If the game cannot run because it needs greater access than normal, click the Run This Program as an Administrator check box. These options can often overcome problems running games that were designed before Vista came on the scene.

After making changes to these or other tabs, click Apply; then click OK to use the changes immediately.

➪ To learn more about using the Compatibility tab and the Program Compatibility Wizard to run legacy games, see "Solving Problems with Legacy Games," p. 260, this chapter.


A
Play Properties
Security
Details
Previous Versions
General
Shortcut
Compatibility
B

Play

Target type: Application

Target location: Luxor 2

Target: [illegible]

Start in: "C:\Program Files\MSN Games\Luxor 2\"

Shortcut key: None

Run: Normal window

Comment: Play

Open File Location
Change Icon...
Advanced...
OK
Cancel
Apply
Play Properties
Security
Details
Previous Versions
General
Shortcut
Compatibility

If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.

Compatibility mode

☐ Run this program in compatibility mode for:

Windows XP (Service Pack 2)

Settings

☐ Run in 256 colors

☐ Run in 640 x 480 screen resolution

☐ Disable visual themes

☐ Disable desktop composition

☐ Disable display scaling on high DPI settings

Privilege Level

☐ Run this program as an administrator

Show settings for all users
OK
Cancel
Apply

A Configuring the shortcut to the game.

B Configuring compatibility.

Figure 10.5

The Play Properties sheet.

DirectX 10, the Future of Windows Gaming

Although DirectX 9 is the basis for Windows Vista's snazzy 3D Aero desktop, the actual version of DirectX included with Windows Vista is the long-awaited DirectX 10. DirectX 10 was built from the ground up, instead of being an incremental upgrade from DirectX 9. DirectX 10 offers many advantages compared to DirectX 9, the version found in Windows XP:

- Unified shader architecture—DirectX 9 separated shaders into vertex and pixel shaders, which could cause backlogs when one type of rendering was more in demand in a particular scene. DirectX 10 supports unified shaders that can be switched between vertex, pixel, and geometry shader operations on-the-fly, eliminating bottlenecks and improving performance.
- Shader Model 4.0—Drastically increases the power and precision available for 3D rendering compared to previous shader models. For example, Shader Model 4.0 includes more than 64,000 instruction slots, compared with 256 in DirectX 9's Shader Model 2 and 512 in DirectX 9.0c's Shader Model 3.0. The number of constant registers, temporary registers, textures, and other features is also much greater in Shader Model 4.0. The result? More realistic 3D rendering. The day you walk by a DirectX 10-rendered game playing on an HDTV and think you're watching a TV show, you'll know what I mean.
- Moving the rendering load from the CPU to the GPU—Various methods, including substantial reductions in the command cycle counts needed to perform common operations and new ways to control the appearance of similar objects with a single draw call, make DirectX 10 more efficient than DirectX 9, resulting in smoother, more realistic game play.

NOTE

Windows Vista includes an updated version of DirectX diagnostics (dxdiag.exe). Use it to check the status of DirectX interfaces to your display, audio, and input devices.

To start DirectX Diagnostics, click the Start orb and type **dxdiag** into the search tool. When dxdiag appears in the list of programs in the right pane, press Enter to run it.

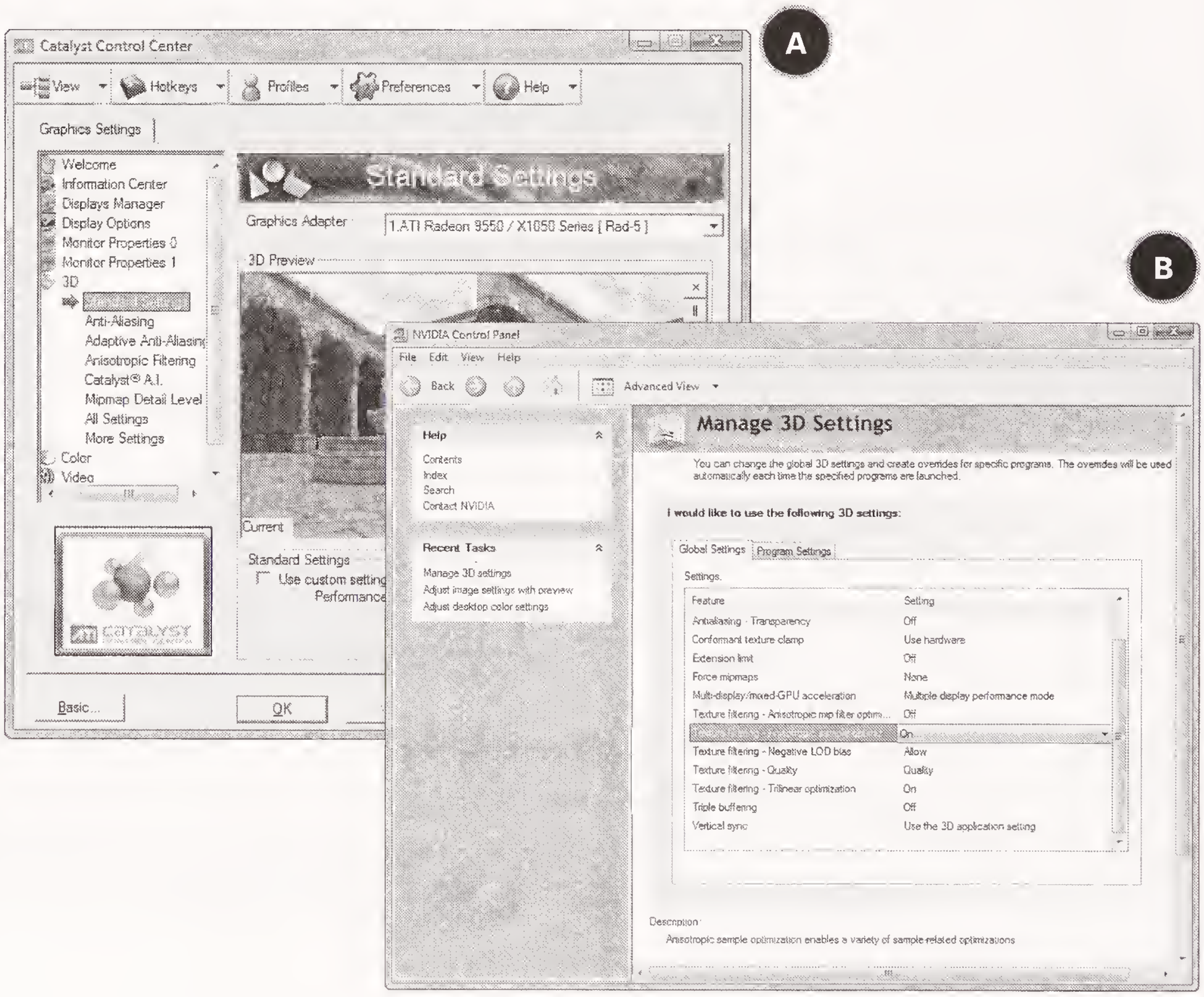
DirectX 10 is fully compatible with earlier versions of DirectX, so you can play existing DirectX games and use graphics cards that support older versions of DirectX without difficulty. If you have problems with legacy games, don't blame DirectX!

Dealing with Limited 3D Driver Settings

Let's face it. In PC graphics any system built for gaming has either an ATI- or nVIDIA-based card. And when it comes to controlling the 3D capabilities of your ATI- or nVIDIA-based graphics card through Windows Vista's in-box or Windows Update-provided drivers, the answer is simple: There aren't any controls. When you click the Advanced Settings button from the Display Settings dialog, you're greeted with four basic tabs (Adapter, Monitor, Troubleshoot, and Color Management), none of which have any effect on your 3D graphics card's 3D features.

To get the control you need to tweak Direct3D and OpenGL settings, you need to install the GPU maker's own Vista drivers and use the driver's own control center. Depending on the driver, the driver might be implemented as additional tabs in the Advanced Settings dialog, or it might use its own interface.

Figure 10.6 A shows the ATI Catalyst 7.2 driver's 3D menu, whereas Figure 10.6 B shows the nVIDIA ForceWare driver's 3D menu.



A With ATI Catalyst.

B With nVIDIA ForceWare.

A
B
Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Monitor Properties 0
Monitor Properties 1
3D
Anti-Aliasing
Adaptive Anti-Aliasing
Anisotropic Filtering
Catalyst® A.I.
Mipmap Detail Level
All Settings
More Settings
Color
Video
Standard Settings
3D Preview
Current
Basic...
OK
NVIDIA Control Panel
File
Edit
View
Help
Back
Advanced View
Help
Contents
Index
Search
Contact NVIDIA
Recent Tasks
Manage 3D settings
Adjust image settings with preview
Adjust desktop color settings
Manage 3D Settings
Global Settings
Program Settings

Graphics Adapter: 1.ATI Radeon 9550 / X1050 Series [Rad-5]

Standard Settings

☐ Use custom setting

Performance

You can change the global 3D settings and create overrides for specific programs. The overrides will be used automatically each time the specified programs are launched.

I would like to use the following 3D settings:

Settings.

Feature	Setting
Antialiasing - Transparency	Off
Conformant texture clamp	Use hardware
Extension limit	Off
Force mipmaps	None
Multi-display/mixed-GPU acceleration	Multiple display performance mode
Texture filtering - Anisotropic mip filter optim...	Off
	On
Texture filtering - Negative LOD bias	Allow
Texture filtering - Quality	Quality
Texture filtering - Trilinear optimization	On
Triple buffering	Off
Vertical sync	Use the 3D application setting

Description:

Anisotropic sample optimization enables a variety of sample-related optimizations

Figure 10.6

Configuring 3D settings.

What effect on performance does changing from a bare-bones Microsoft-provided driver to a vendor-provided driver have? As the automobile folks like to say, "your mileage may vary." You can perform your own benchmarks using products such as Futuremark's 3DMark06 Basic or Doom 3's timedemo if you're curious.

Experience suggests that newer *production* drivers usually tend to produce better 3D performance, whereas beta drivers may vary in performance (that's why they're not yet in production!).

What's not in dispute is this: You can't control your graphics card the way you'd like if you settle for the drivers Microsoft provides on the Windows Vista DVD or via Windows Update. For features, control, and customization, you need the vendor's own drivers, and you should plan to update them frequently.

NOTE

One of the most popular benchmarks, Futuremark's 3DMark 06 Basic, can be downloaded free. Find links at the Futuremark website, www.futuremark.com, and check out the additional features of the commercial versions.

For slower graphics cards, you may prefer to use the older 3DMark 05 Basic, also available for download. You can't directly compare the scores, though.

Solving Problems with Gaming Audio

Windows Vista does not support the Hardware Abstraction Layer (HAL) for DirectSound or DirectSound 3D, which, under previous versions of Windows, provides the foundation for many 3D audio effects extensions such as EAX. Instead, Windows Vista supports the OpenAL 3D audio standard, which is used by popular game engines such as Unreal, Torque, and Doom 3.

Because DirectSound and DirectSound 3D are no longer supported in hardware on Windows Vista, games that do not use OpenAL audio must rely on host-based audio processing. The default host-based audio processor does not provide support for advanced 3D audio effects. Consequently, games that do not use OpenAL will revert back to basic stereo audio.

For a list of games that support OpenAL audio, see www.openal.org/titles.html.

All that said, if you have a SoundBlaster X-Fi sound card (not including the external X-Fi Xtreme audio device), you can use the Creative ALchemy driver to translate DirectSound audio commands in your game into OpenAL commands and enjoy full 3D positional audio effects on many DirectSound and DirectSound 3D-based games. For more information, see http://connect.creativelabs.com/alchemy/default/aspx.

NOTE

When you change from a Microsoft-provided graphics driver to a vendor-supplied driver, don't be surprised if your WEI switches to "unrated." As far as Windows Vista is concerned, this type of driver switch looks like a hardware swap. To regenerate your index, click Update My Score from the Performance Information and Tools dialog.

Will your score change with a driver change? It might, but not necessarily in the direction you'd prefer. You may see a slight drop in the Aero graphics score in some cases.

Solving Problems with Legacy Games

NOTE

The Compatibility tab is not available in Games Explorer. To access it, right-click the game's program or shortcut icon in Computer Explorer.

Any given legacy game (which could be as recent a release as early 2007 or date back to the days of Windows 95) might run fine under Windows Vista, have problems, or not run at all. To help you coax older games into cooperating, you have three methods you can use:

- Manually configure the game's Compatibility tab.
- Use the Compatibility Wizard to make the same changes as the Compatibility tab does, but in an easier-to-test manner.
- Create a virtualized environment to host older Windows and MS-DOS games.

Using the Program Compatibility Wizard and Compatibility Tab

The Compatibility tab (refer to Figure 10.5 B) and the Program Compatibility Wizard provide two different ways to accomplish the same task: "lie" to your application about the version of Windows you're using. If you're new to the process, you may prefer to use the wizard, but after you've used it a couple of times, you may find that the Compatibility tab is easier. Either way, you can persuade many games designed for older versions of Windows to play nicely in Windows Vista.

TIP

Before you assume that games made for Windows 95/98 won't work in Vista without some fiddling around, try them first. You might be pleasantly surprised, as we were, to see that an assortment of Windows games as old as the mid-1990s (including some written for Windows 3.1!) worked fine on a 32-bit Windows Vista Ultimate edition installation without any special settings.

What kinds of problems suggest the need to use a compatibility tool?

Table 10.1 provides a list of typical problems and how you might use a compatibility tool to enable the program to run properly.

The Program Compatibility Wizard provides the same options, and can be started from Help and Support. Why use the wizard? It provides a convenient way to experiment with different settings.

Why skip the wizard? It takes more time than the Compatibility tab, and if you already know the settings you need to use, there's no need to use the wizard.

Table 10.1 Using Windows Vista's Program Compatibility Tools

Problem	Suggested Option	Notes
Game won't start.	Run this program as an administrator.	Option available on administrator accounts. To enable this option on standard accounts, click Show Settings for All Users and provide administrator credentials.
	Compatibility Mode	Select the version of Windows for which the game was originally designed.
Game has distorted colors.	Run in 256 colors	Many Windows 95/98 games were made for 256-color modes.
Game GUI is distorted or jagged.	Run in 640×480 screen resolution	Also select Windows 95 in Compatibility Mode if this setting alone does not help. You may need to manually select this option using the Advanced display settings dialog if your display does not list this mode on the Personalization Monitor settings dialog (see Figure 10.8)
Menus or buttons on the title bar don't display properly; slow game performance.	Disable Visual Themes	This tweak also helps boost game performance.
General display problems; slow game performance.	Disable Desktop Composition	This tweak also helps boost game performance.
Text in program menus or windows is distorted and you have specified larger-than-normal fonts for the Windows desktop.	Disable display scaling on high DPI settings	
Other users want to use the program, and you want to set up the program just once.	Show settings for all users	

Rolling Out the Big Guns: Virtualization and Gaming

What do you do if you absolutely, positively, must play a Windows game that simply won't run under Windows Vista—no matter how nicely you ask it with the compatibility tools described in the previous section? Well, you *could* dig up that old Windows 98 computer you used to have—oh, wait, you donated it to a preschool a couple of years ago. Or, what if your favorite MS-DOS game is so memory hungry that it displays a memory error when you try to run it, no matter what you do to fiddle around with the settings. Now what?

Well, as long as you have a legitimate install CD, DVD, or floppy disk set of your favorite gaming OS, you have the answer—and it doesn't involve digging through your parts bins to create a "back from the dead" grave robber's special PC either. Thanks to Microsoft's Virtual PC 2007, you can run almost any operating system you can name as a guest on Windows Vista Business, Enterprise, or Ultimate editions.

What can you run? Naturally, Windows 98, Windows Me (aargh!), Windows 2000, and Windows XP are on the officially sanctioned list. How about that MS-DOS, eh? Although it's not officially supported, you can also run it under Windows Vista with Virtual PC 2007 as well, which will make fans of the original Castle Wolfenstein, Commander Keen, Red Baron (see Figure 10.7), and Secret Weapons of the Luftwaffe very happy!

You can even run extreme old-timers such as OS/2 Warp and Windows NT 4.0—not that there are many (any?) games you'd like to try for those operating systems. Virtual PC 2007 can also be used to host Linux distros and other operating systems. Keep in mind you do need a license for each OS you want to run.

Get your copy of Virtual PC 2007 by surfing to http://www.microsoft.com/windows/products/winfamily/virtualpc/default.mspx.

For an unofficial list of operating systems tested on Virtual PC 2004 (VPC 2007's older sibling), go to http://vpc.visualwin.com/. You should have similar results with VPC 2007.

After you install Virtual PC 2007, Windows Vista becomes a host for guest operating systems, which are installed from the original media. Before you can install a guest operating system, you must set up a virtual machine for it to use. You can select from preconfigured virtual machine setups, or create your own (as you would need to for running MS-DOS, for example).

After you set up a virtual machine, you need to install the operating system the virtual machine will use. To install your operating system, insert the startup disk or CD into the appropriate drive,

NOTE

Virtual PC 2007 also works on Windows XP Professional and Windows XP Tablet PC Edition. It complains, but will also install on Windows XP Home Edition.

TIP

Virtualization works (fairly) well on systems with 1GB of RAM, but it works a lot better if you have more RAM. Consider 2GB or more if you plan to use virtualization seriously, especially if you want to run multiple windows at the same time.

TIP

Virtual PC 2007 is available in 32-bit and 64-bit editions, so you can use it with 64-bit editions of Windows Vista to provide a home for 16-bit MS-DOS and Windows programs (64-bit Vista doesn't support 16-bit apps natively).

select the virtual machine you created to host the OS in the Virtual Machine Console, and click Start. Your operating system installs as it normally would: the difference being that you are installing it into a virtual hard disk image hosted by Virtual PC 2007 instead of a physical hard disk.

If you are installing MS-DOS 6.22, for example, when you run `fdisk.exe` and `format.exe`, you are preparing the virtual disk image, not destroying your system hard disk, so don't panic (you *do* have your towel, don't you?).

By default, each virtual machine is stored in the current user's Documents folder in a subfolder called My Virtual Machines. Each virtual machine has a name ending in .vmc.

After you create virtual machines, you can make them available to other users by placing them in the Public folder's Documents folder. They can be added to that user's Virtual PC Console by clicking the New button, clicking Add an Existing Virtual Machine, and navigating to the appropriate folder. Note that users with parental controls need administrator-level credentials to use Virtual PC.

NOTE

I still have various CD and floppy disk installation sets of Windows and MS-DOS, although the original systems have long since been toted off to the computer boneyard. I've used them over the years to provide a reference for performing a clean install with an upgrade version of an operating system. Now that virtualization is becoming mainstream, I'm even happier than ever that they didn't get tossed, as I can dip into the vault for vintage OS versions as needed.

Possible OS Installation Perils, and How to Avoid Them

If it's been a long time since you installed a different operating system, chances are you've forgotten a few things. Use these tips to avoid the most common woes:

- Read the Virtual PC 2007 documentation, which is provided in the form of a Help file as well as release notes. To get the latest version of the release notes, navigate to C:\Program Files\Microsoft Virtual PC, navigate to the appropriate language folder, and open the readme html document. It contains a pointer to the appropriate page at Microsoft.com.
- Make sure you have everything you need before you start. For example, if you are installing from an upgrade CD, make sure you have a CD of a qualifying operating system as well. The upgrade installer will prompt you for the location of a qualifying operating system during the installation process and will stop dead in its tracks if you're not prepared.

- If you are installing MS-DOS, you will also need to provide an MS-DOS-compatible CD-ROM device driver (if you plan to install games from CD) and an MS-DOS-compatible mouse driver (if you plan to play games that use a mouse). If you have a Windows 98 startup floppy disk, you can use the OAKCDROM.SYS device driver it contains for most CD and DVD drives. If you don't have it, you can download it from http://www.cdrom-drivers.com/companies/745.htm (free registration required). The AOATAPI.SYS device driver (available from http://members.driverguide.com/driver/detail.php?driverid=68163) also works well. The CuteMouse (CTMouse) driver available from http://cutemouse.sourceforge.net/ works very well with both PS/2 and USB mouse devices. It uses very little RAM.
- You must create Autoexec.bat and Config.sys files that properly reference these drivers before you can use a CD-ROM drive or mouse from the DOS prompt.
- Virtual PC 2007 doesn't use USB drives—never has, and still won't. If you can't imagine life without USB drives, consider commercial virtualization environments such as WMware (www.vmware.com) that do support USB storage devices.

After you install an operating system into the virtual machine, start the Virtual Machine Console, select the virtual machine, and click Start. After it boots, install the game(s) you want to play in the virtual machine, and enjoy!

Figure 10.7 illustrates Virtual PC 2007 running an MS-DOS game (Sierra's Red Baron) and a Windows 98 game (the demo version of Quake II) in separate virtual machines.

Optimizing an MS-DOS virtual machine can be tricky, requiring you to plunge into the arcana of conventional and upper memory management, and if you don't want to use Virtual PC 2007, there are alternatives. A couple worth considering include DOSBox, a command-line open-source DOS emulator available from http://dosbox.sourceforge.net (Windows-based front-ends are also available to make it easier to configure) and VMWare Player, a free program from VMWare (www.vmware.com) that permits Windows and Linux systems to run virtual machine applications created with the commercial VMWare Workstation program.

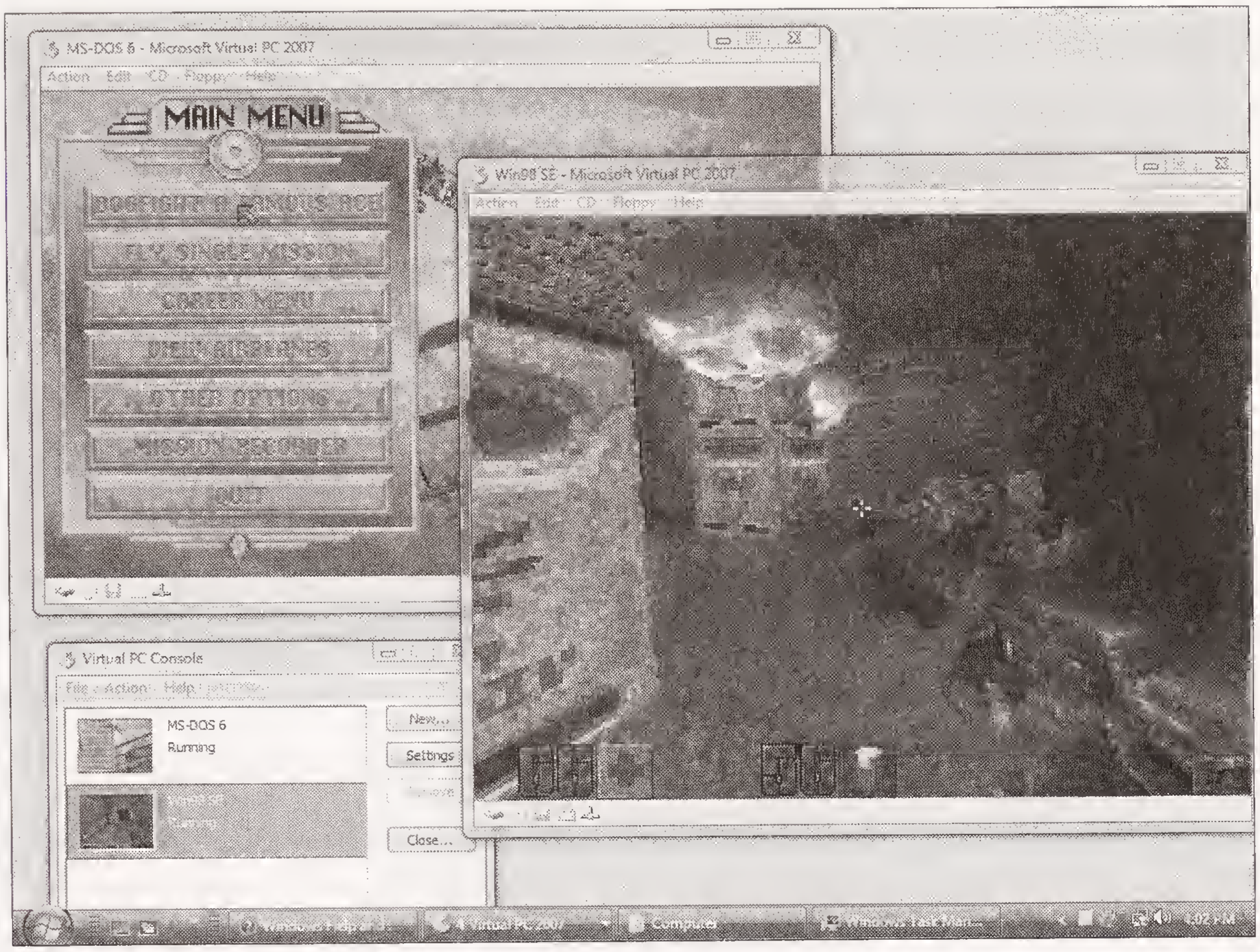

MS-DOS 6 - Microsoft Virtual PC 2007
Action Edit CD Floppy Help
MAIN MENU
Win98 SE - Microsoft Virtual PC 2007
Virtual PC Console
File Action Help
MS-DOS 6
Running
New...
Settings
Remove
Close...

Figure 10.7

Gaming with Microsoft Virtual PC 2007.

Gaming Tips and Tricks

Whether you're devoted to the latest 3D powerhouses or have a soft spot for the games of yesteryear, these tips will help you enjoy Vista gaming and beat some problems you might encounter.

- **640×480 for Old Windows Games**. Set up your secondary CRT or LCD display in 640×480 mode and drag games that don't use the entire screen when maximized over to that display (a common problem with games made for Windows 95). This trick can be used if selecting 640×480 mode with the Compatibility tab doesn't have any effect on your display.

  Here's how to make this work:

  1. Right-click the desktop, select Personalize, select Display Settings, and select your secondary display.
  2. If you don't see an option for 640×480, leave the slider alone and click Advanced Settings.
  3. From the Adapter tab, click List All Modes.
  4. Scroll down to 640×480, True Color, and choose the best refresh rate for your display. Click OK to close each dialog.

- **Changing Your Game's Default Icon**. If you don't like the icon assigned to your game, right-click the shortcut in the Start menu and select Properties. The Shortcut tab appears. Click Change Icon and choose a different icon for the game from the icons stored in the game's .exe file. If there are no icons, click OK on the dialog box reporting this, and you can choose an icon from Windows Vista's stock icon collection. Use the Browse tool to navigate to other locations, and you can select icons from a different program or from icons you have downloaded or made with an icon editor.
- **Fighting Boredom with Dual-Core Power**. If you have a dual-core processor, you can play games and perform other tasks at the same time without completely bogging down your system. So, if you get bored while ripping some media, play a game!
- **More Video RAM for Better Vista-ing**. If you're shopping for a new graphics card, get one with more RAM as well as a more powerful GPU. Remember, everything on the Vista desktop is a 3D surface when Aero is in use. And, by picking up a card with DirectX 10 support, you're ready for the next generation of games.
- **OpenGL Guidelines**. If you play games that use OpenGL, check the OpenGL Headline News at http://www.opengl.org/ to learn when your GPU developer releases updated drivers that improve OpenGL performance. Microsoft's OpenGL 1.1 implementation is software based and is thus slower than drivers provided by GPU developers.
- **Bad, Bad Driver!** If you play games in a window (rather than full-screen) and the screen becomes corrupted, use the Personalization menu in Control Panel to switch to the Windows Vista Basic color scheme before running the game, and check for an updated graphics driver ASAP. At the time Vista launched, both ATI and nVIDIA were behind the curve in producing full-featured, fully stable Vista graphics drivers.

⇨ For more information about switching between color schemes, see "Personalizing Your Desktop," Chapter 4, p. 85.

- **Two (GPUs) Are Better Than One**. If you're looking for huge real-world gaming performance boosts, see whether your current hardware supports NVIDIA's SLI or ATI's CrossFire dual-card 3D rendering schemes. If your motherboard features a second PCI-Express video slot and your current card is compatible with the appropriate method, install the appropriate card to crank up your 3D performance. See http://www.nvidia.com and http://ati.amd.com for more information.

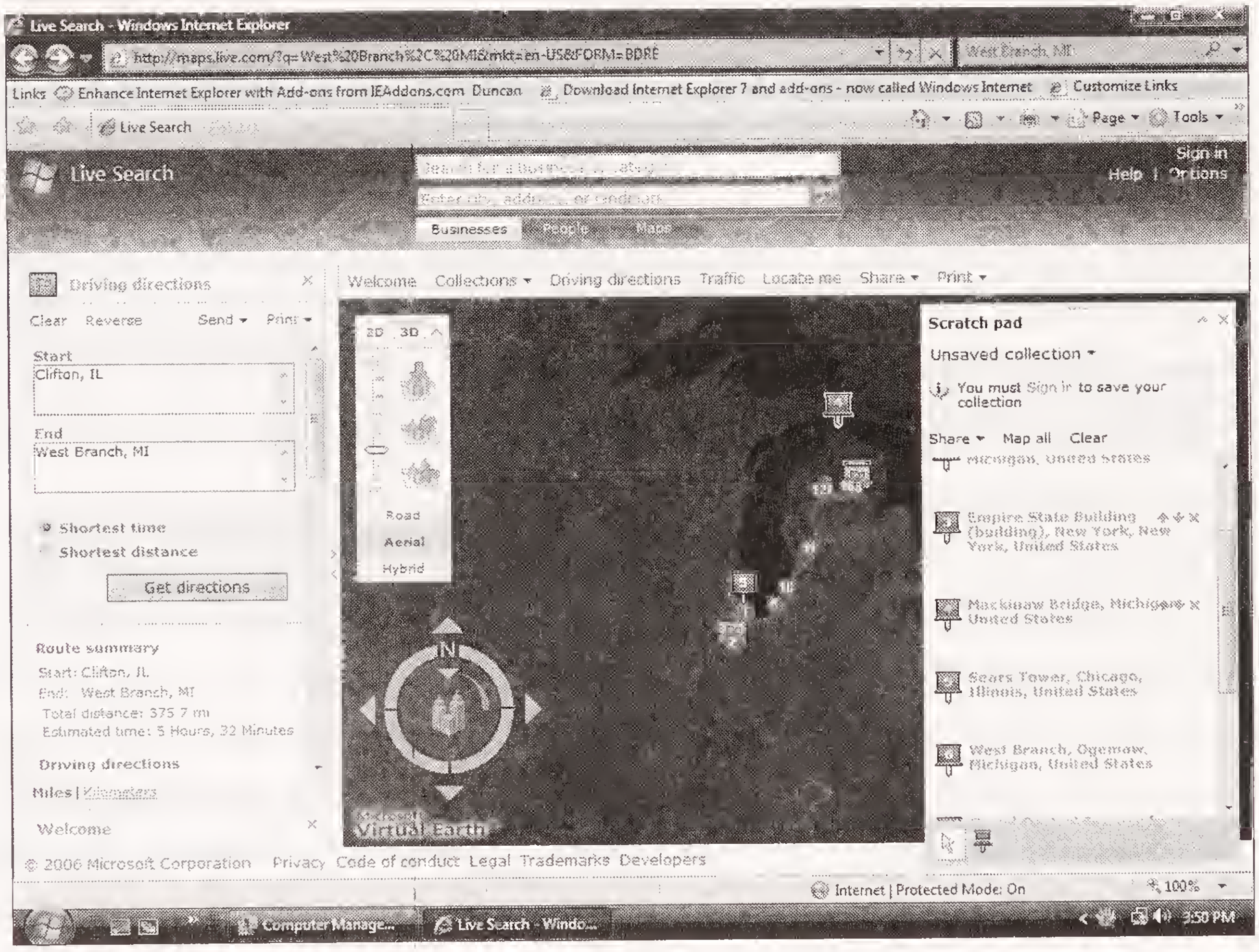
Chapter Eleven

Internet the Windows Vista Way

IN THIS CHAPTER

- How IE 7 Makes Web Browsing Both More Secure and More Powerful
- IE 7's New User Interface
- Securing Your Online Experience with IE 7
- New and Improved Internet Options
- IE 7 Best and Worst Practices

How IE 7 Makes Web Browsing Both More Secure and More Powerful


Live Search - Windows Internet Explorer
http://maps.live.com/?q=West%20Branch%2C%20MI&mkt=en-US&FORM=BDRE
West Branch, MI
Links
Enhance Internet Explorer with Add-ons from IEAddons.com
Duncan
Download Internet Explorer 7 and add-ons - now called Windows Internet
Customize Links
Live Search
Page
Tools
Live Search
Sign in
Help | Options
Businesses
People
Maps
Driving directions
Clear
Reverse
Send
Print
Welcome
Collections
Driving directions
Traffic
Locate me
Share
Print
2D
3D
Road
Aerial
Hybrid
N
Virtual Earth
Scratch pad
Unsaved collection
You must Sign in to save your collection
Share
Map all
Clear
Michigan, United States
Empire State Building (building), New York, New York, United States
Mackinaw Bridge, Michigan, United States
Sears Tower, Chicago, Illinois, United States
West Branch, Ogemaw, Michigan, United States
© 2006 Microsoft Corporation
Privacy
Code of conduct
Legal
Trademarks
Developers
Internet | Protected Mode: On
100%
Computer Manage...
Live Search - Windo...
3:50 PM

Start: Clifton, IL

End: West Branch, MI

● Shortest time
○ Shortest distance

Route summary
Start: Clifton, IL
End: West Branch, MI
Total distance: 375.7 mi
Estimated time: 5 Hours, 32 Minutes

Driving directions
Miles | Kilometers

It's no surprise that a new version of Windows comes complete with a new take on web browsing: Internet Explorer version 7 (IE 7). Although IE 7 superficially resembles its immediate predecessor, IE 6, from a distance (say, from across the room), the closer you look, the easier it is to see that IE 7 reflects both Microsoft's longtime habit of being "inspired" by competitive products and a new desire to secure its notoriously leaky web browser. New and improved features include

- Tabbed browsing with options to quickly view all tabs
- A new graphical menu system
- Integrated Windows Live Search
- Protected mode operation to stop browser-based attacks
- Antiphishing protection against bogus websites
- Integrated RSS reader
- Improved print options
- New page viewing options
- Easier access to pop-up blocker, add-on manager, and other features
- More powerful configuration options

Grab your mouse and climb aboard for a tour of your window to the Internet, Internet Explorer 7.

IE 7's New User Interface

IE 7's new user interface is designed to make browsing faster, easier, and more powerful. It features changes to how the browser address bar, menus, and favorites work, new features such as support for RSS feeds, page zooming, and improved print formatting options.

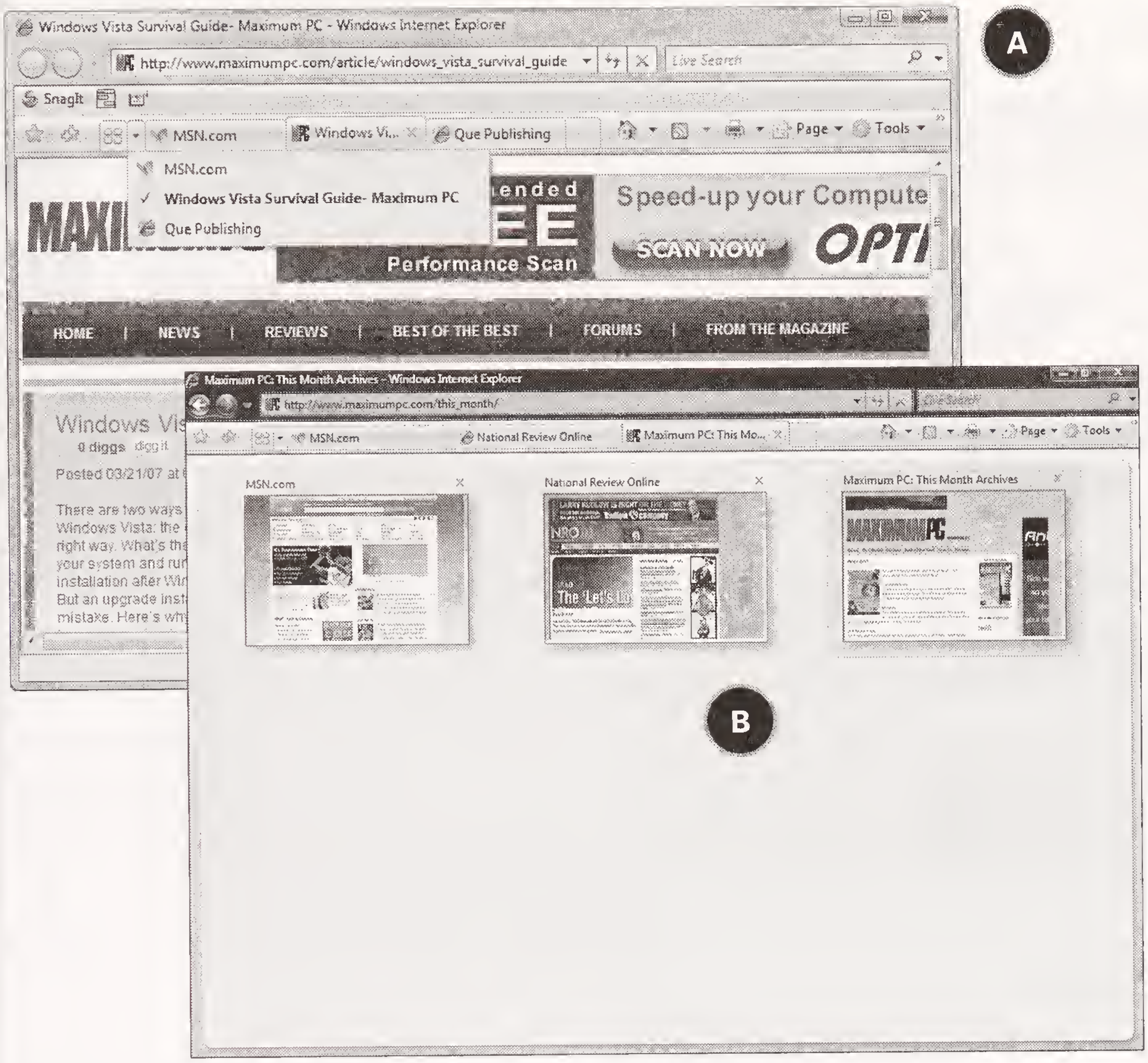
Using Tabbed Browsing

The most obvious change in IE 7 is its "new" tabbed browsing feature: Click the empty tab to the right of the current tab (or press Ctrl+T) to open a new blank tab. Enter the URL into the address bar, and you're off to another location on the World Wide Web. Thanks to tabbed browsing (a feature borrowed from IE 7's arch-rival, Mozilla's Firefox), you're not using up system resources as quickly as you would if you opened another copy of IE.

Although IE 7's tabbed interface was borrowed from Firefox, IE 7 also includes original ways to navigate quickly between tabs. As in Firefox, IE 7 displays each tab's title just below the address bar, so you can click the tab you want. However, you can also click the Tabs pull-down menu to choose the tab you want (see Figure 11.1 A) or click the Quick Tabs button to see a live thumbnail of each open tab (see Figure 11.1 B).

NOTE

Somebody at Microsoft needs to arrange a meeting between the team responsible for IE 7 and the desktop toolbar team: No matter how many tabs you have open in IE 7, only the original tab and the currently selected tab are displayed in the toolbar. Ditto for Alt+Tab and Windows+Tab switching. Guess what? If the original tab is the selected tab, you see it twice in the toolbar! I'm hoping the Desks and the Tabs settle their feud over screen real estate before somebody calls Officer Krupke.


Windows Vista Survival Guide- Maximum PC - Windows Internet Explorer
http://www.maximumpc.com/article/windows_vista_survival_guide
Live Search
SnagIt
MSN.com
Windows Vi...
Que Publishing
Page
Tools
MSN.com
Windows Vista Survival Guide- Maximum PC
Que Publishing
HOME
NEWS
REVIEWS
BEST OF THE BEST
FORUMS
FROM THE MAGAZINE
Maximum PC: This Month Archives - Windows Internet Explorer
http://www.maximumpc.com/this_month/
MSN.com
National Review Online
Maximum PC: This Mo...
MSN.com
National Review Online
Maximum PC: This Month Archives
A
B

A Selecting the tab from the Tabs pull-down menu.

B Using QuickTabs to view, select from, or close tabs.

Figure 11.1

Working with multiple tabs.

I prefer IE 7's tabbed browsing over the stock Firefox design because it includes more ways to view your tabs. To get a preview comparable to Quick Tabs in Firefox, for example, you must install an extension such as Tab Preview.

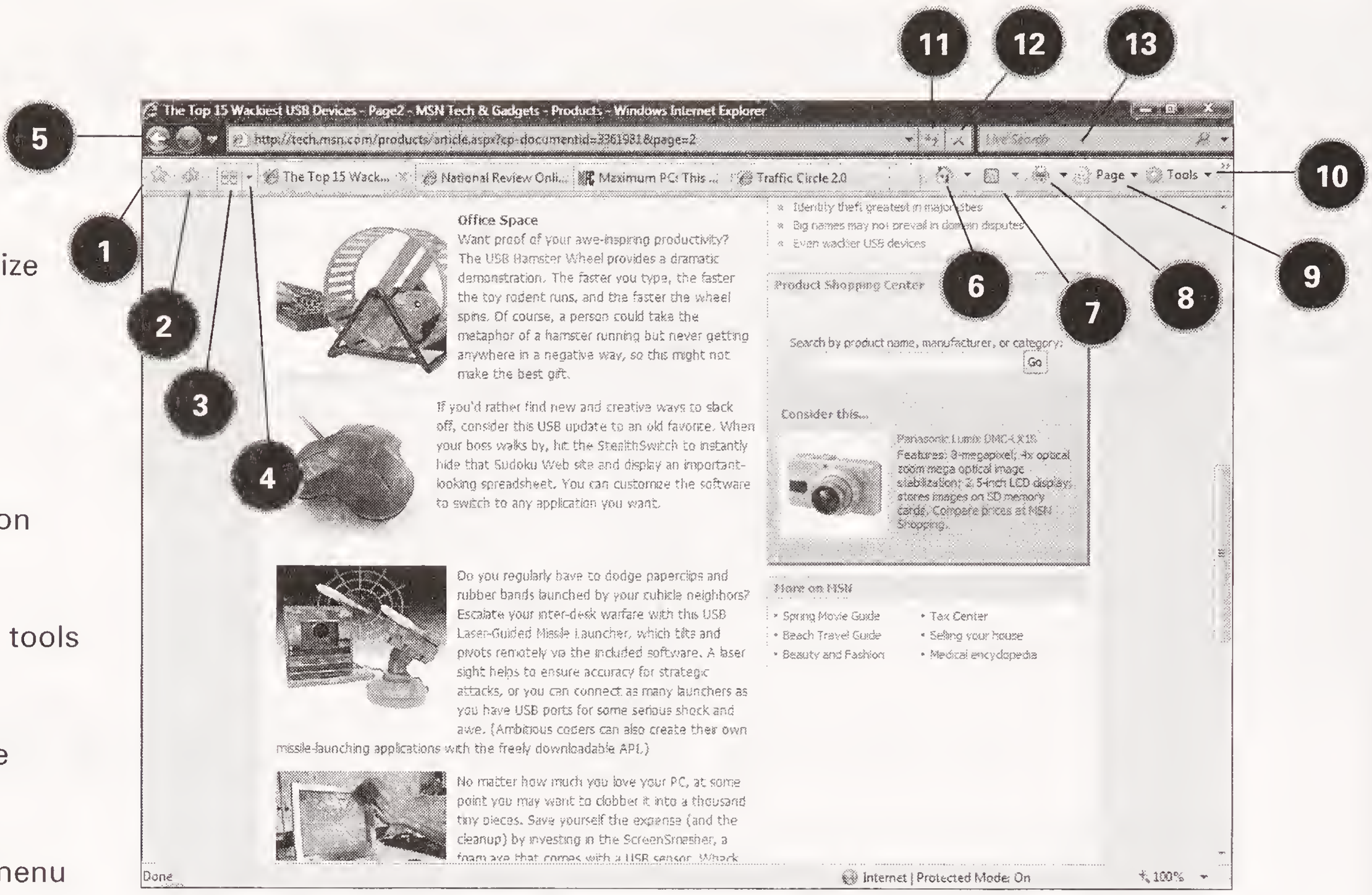
Feature Rating: ***Tabbed Browsing***

Navigating IE 7's New Menu System

To make room for IE 7's new tabbed browsing, the browser menu design folks in Redmond have gone iconic. Figure 11.2 shows off the new look of familiar features.

NOTE

IE 7 sends the much-despised IE 6 search tool to the doghouse and replaces it with a connection to the Windows Live Search tool (www.live.com). Although you can use Live Search with older versions of Windows (and yes, even other operating systems), its use as the default Windows Vista search tool makes it a *de facto* part of Windows Vista. You can, however, change this field to connect with your preferred search engine.


11
12
13
5
1
2
3
4
6
7
8
9
10
The Top 15 Wackiest USB Devices - Page2 - MSN Tech & Gadgets - Products - Windows Internet Explorer
http://tech.msn.com/products/article.aspx?cp-documentid=3361981&page=2
Live Search
The Top 15 Wack...
National Review Onli...
Maximum PC: This ...
Traffic Circle 2.0
Page
Tools
Identity theft greatest in major cities
Big names may not prevail in domain disputes
Even wackier USB devices
Product Shopping Center
Search by product name, manufacturer, or category:
Go
Consider this...
More on MSN
Spring Movie Guide
Beach Travel Guide
Beauty and Fashion
Tax Center
Selling your house
Medical encyclopedia
Done
Internet | Protected Mode: On
100%

Office Space
Want proof of your awe-inspiring productivity? The USB Hamster Wheel provides a dramatic demonstration. The faster you type, the faster the toy rodent runs, and the faster the wheel spins. Of course, a person could take the metaphor of a hamster running but never getting anywhere in a negative way, so this might not make the best gift.

If you'd rather find new and creative ways to slack off, consider this USB update to an old favorite. When your boss walks by, hit the StealthSwitch to instantly hide that Sudoku Web site and display an important-looking spreadsheet. You can customize the software to switch to any application you want.

Panasonic Lumix DMC-LX1S
Features: 8-megapixel; 4x optical zoom mega optical image stabilization; 2.5-inch LCD display; stores images on SD memory cards. Compare prices at MSN Shopping.

Do you regularly have to dodge paperclips and rubber bands launched by your cubicle neighbors? Escalate your inter-desk warfare with this USB Laser-Guided Missile Launcher, which tilts and pivots remotely via the included software. A laser sight helps to ensure accuracy for strategic attacks, or you can connect as many launchers as you have USB ports for some serious shock and awe. (Ambitious coders can also create their own missile-launching applications with the freely downloadable API.)

No matter how much you love your PC, at some point you may want to clobber it into a thousand tiny pieces. Save yourself the expense (and the cleanup) by investing in the ScreenSmasher, a foam axe that comes with a USB sensor. Whack

1 Favorites Center
2 Add/Organize Favorites
3 Quick Tabs
4 Tab selection menu
5 Navigation tools
6 Home page menu
7 RSS feed menu
8 Print menu
9 Page menu
10 Tools menu
11 Refresh page
12 Stop
13 Search window (lists current search provider)

Figure 11.2

IE 7's new icons and what they do.

To get the details on what you can do with this new user interface (hint: it's more than you could do with IE 6), keep reading.

Creating and Using Favorites

Instead of a single star icon for Favorites (or bookmarks, for you unreconstructed ex-Netscape Navigator users), IE 7 gives you a double-star iconstallation:

- Click the star/plus sign for Add to Favorites (or press Alt+Z).
- Click the star to open the Favorites Center (or press Alt+C).

Select Add to Favorites, and IE 7 opens a modest-sized pull down menu that, despite its size, contains a surprise or two for IE 6 users. In addition to the option to add the current website to your Favorites listing (you can press Ctrl+D for that), you can also add all current tabs to a tab group that you can store as a folder in Favorites (see Figure 11.3 A). When you select this option, you enter the name of the tab group and specify where to store it.

The Add to Favorites menu is also used to organize favorites, and to import and export favorites, cookies, and (new in IE 7) RSS feeds.

The Favorites Center contains the Favorites and Feeds tabs and a History pull-down menu. When you use the Favorites tab, you can open all the favorites in a category at once by moving your mouse over the folder and clicking the right arrow icon that appears (see Figure 11.3 B).

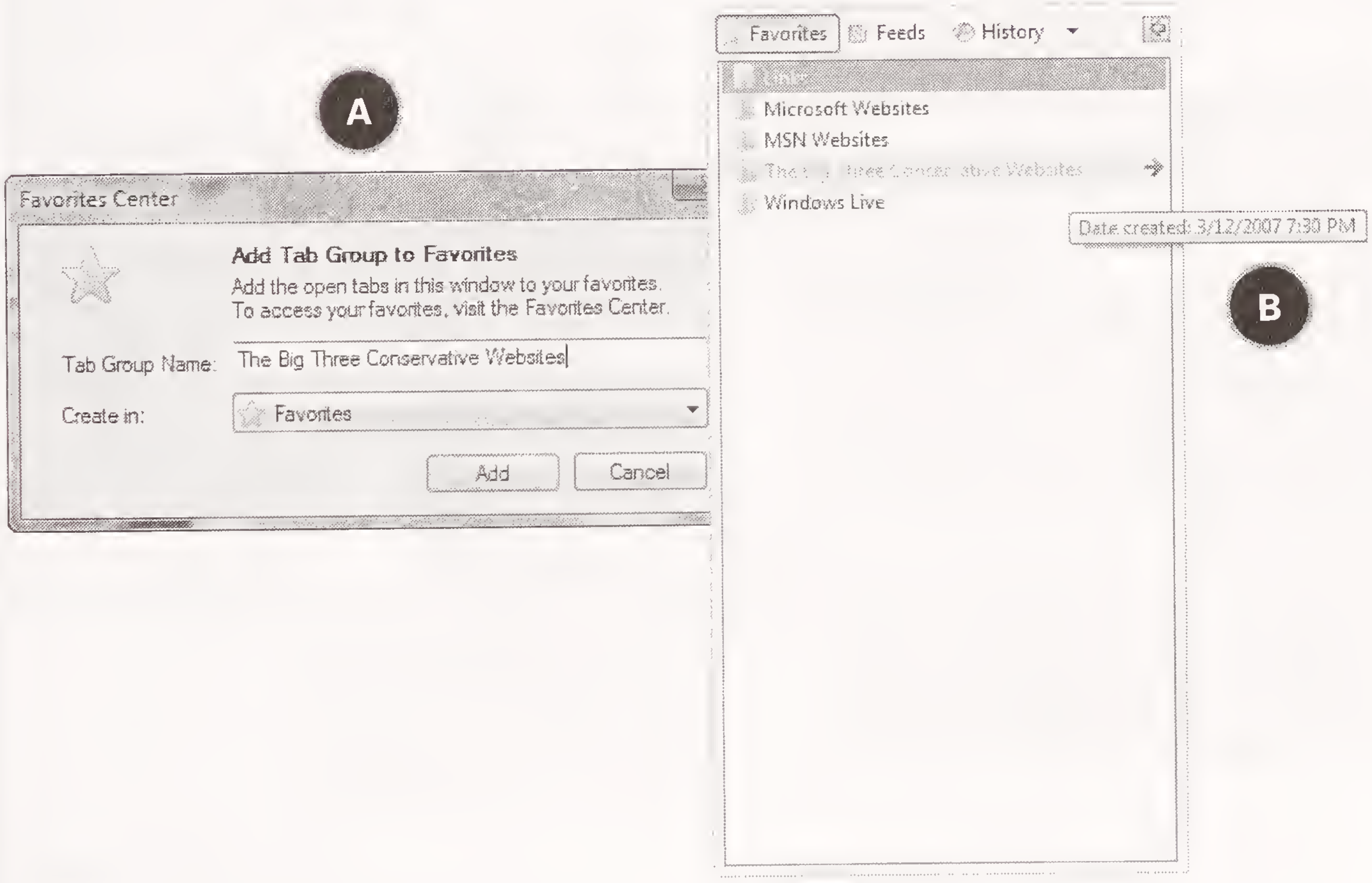
To view or select individual favorites in a folder, click the folder, and then select the favorite you want to open.

While IE 7's handling of favorites isn't exactly original (you can see Firefox's influence at work here), it works – and works very well. The addition of tab groups and the ability to open both a tab group and a folder created over time as a tab group really supercharge browsing. If you haven't bothered to organize your favorites before, these features should give you a shove in the right direction.

TIP

Whether a Favorites folder was created as a tab group or includes favorites stored individually, you can open it as a tab group by clicking the right arrow shown in Figure 11.3 B. Essentially, every folder in Favorites has the potential to be treated as a tab group.

Feature Rating: ***IE 7 Favorites***


A
Favorites
Feeds
History
Links
Microsoft Websites
MSN Websites
The Big Three Conservative Websites
Windows Live
Date created: 3/12/2007 7:30 PM
B
Favorites Center
Add
Cancel

Add Tab Group to Favorites

Add the open tabs in this window to your favorites.
To access your favorites, visit the Favorites Center.

Tab Group Name: The Big Three Conservative Websites

Create in: Favorites

A Storing a tab group.

B Preparing to open a folder as a tab group.

Figure 11.3

Working with Favorites.

TIP

To open a feeds folder as a tab group, hover your mouse over the folder and then click the right arrow.

Viewing and Subscribing to RSS Feeds

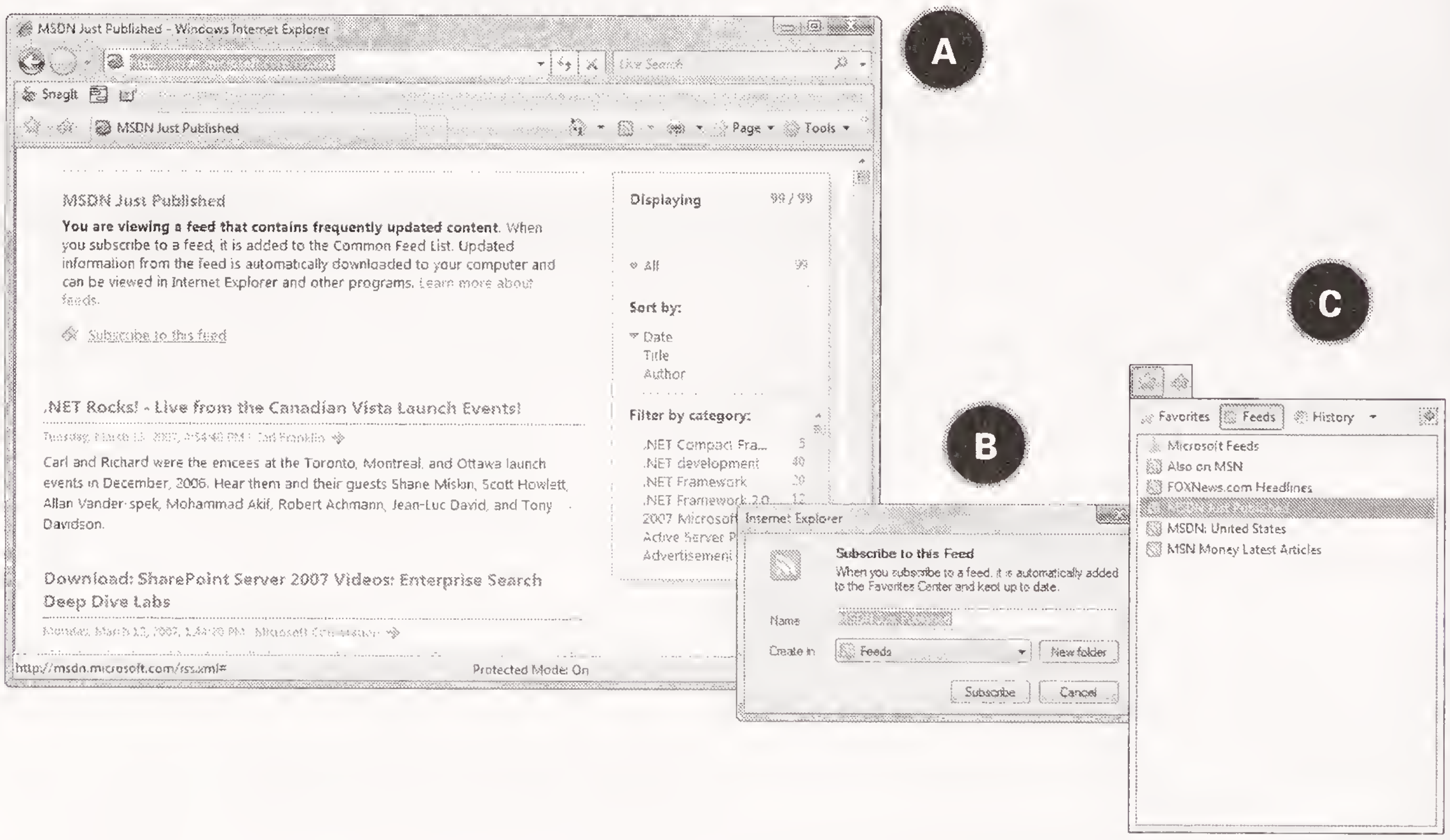
Instead of hopping all over the Web to track down information, you can use IE 7's built-in RSS reader (another feature 'borrowed' by Firefox) to subscribe to your favorite websites' RSS feeds and get instant updates from your favorite online places. To add an RSS feed to the RSS section of Favorites Corner, follow this procedure:

1. Navigate to a website that offers RSS feeds.
2. Click the RSS feed link to view the feed (see Figure 11.4 A).
3. Click the Subscribe to this feed link.
4. Select (or create) the folder to use for the feed, and enter the name you want to use to identify it. Click Subscribe (see Figure 11.4 B).
5. A notification appears indicating whether the feed was added successfully.
6. To open the feed, open the Favorites Center, click the Feeds tab, and select the feed. If the feed is stored in a folder, open the folder, and then open the feed (see Figure 11.4 C).

A Viewing an RSS feed.

B Specifying where to store the RSS feed link in Favorites Center.

C Opening an RSS feed from the Favorites Center.


A
B
C
MSDN Just Published - Windows Internet Explorer
Live Search
SnagIt
MSDN Just Published
Page
Tools
Displaying 99 / 99
All 99
Sort by:
Date
Title
Author
Filter by category:
.NET Compact Fra... 5
.NET development 40
.NET Framework 20
.NET Framework 2.0 12
2007 Microsoft
Active Server P
Advertisement
Internet Explorer
Subscribe
Cancel
New folder
Favorites
Feeds
History
Microsoft Feeds
Also on MSN
FOXNews.com Headlines
MSDN: United States
MSN Money Latest Articles
http://msdn.microsoft.com/rss.xml#
Protected Mode: On

MSDN Just Published

You are viewing a feed that contains frequently updated content. When you subscribe to a feed, it is added to the Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs. Learn more about feeds.

Subscribe to this feed

.NET Rocks! - Live from the Canadian Vista Launch Events!

Carl and Richard were the emcees at the Toronto, Montreal, and Ottawa launch events in December, 2006. Hear them and their guests Shane Mislan, Scott Howlett, Allan Vander-spek, Mohammad Akif, Robert Achmann, Jean-Luc David, and Tony Davidson.

Download: SharePoint Server 2007 Videos: Enterprise Search Deep Dive Labs

Subscribe to this Feed

When you subscribe to a feed, it is automatically added to the Favorites Center and kept up to date.

Name

Create in: Feeds

Figure 11.4

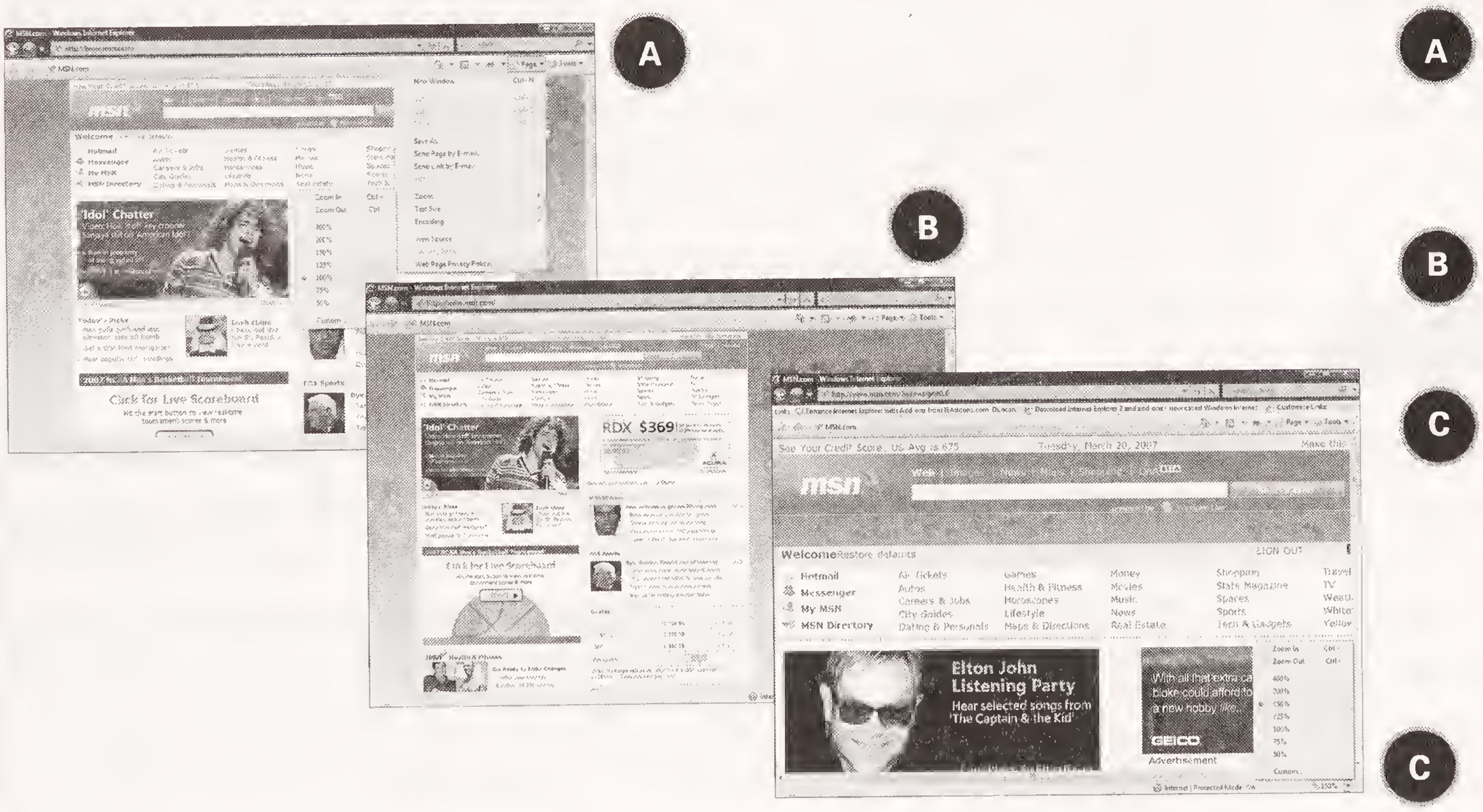
Working with RSS feeds.

RSS feeds are a long-needed enhancement to IE 7. However, RSS feeds that provide multiple stories work better in Firefox than in IE 7; Firefox displays the headlines for all stories when you click the RSS feed icon thanks to its Live Bookmark technology, while IE 7 requires you to view the feed in a full-screen to see the same information. Compared to Firefox, IE 7 gets a big ole thumbs down.

Feature Rating: **RSS Feeds**

Better Page Viewing with Zoom

In IE 6 and earlier versions, your ability to adjust how you viewed a web page was pretty limited: You could adjust the size of the text (unless the designer of the web page had locked text size) and adjust colors, and that was about it. The Page menu in IE 7 features a new (to IE) Zoom option (see Figure 11.5 A). You can select from a range of preset zoom settings from 50% up to 400%, choose a custom setting, or select Zoom in (Ctrl+) or Zoom out (Ctrl–). Figure 11.5 B shows the MSN home page zoomed to 75%, and Figure 11.5 C shows the MSN home page zoomed to 150%.



A The zoom menu with zoom at 100%.

B A page zoomed to 75%.

C A page zoomed to 150%.

Figure 11.5

Zooming page views.

You can use the Zoom option to help you see more of a page at one time or to increase the size of both text and images for better viewing if you're overdue for a trip to the optometrist. You can also adjust the zoom setting with the zoom tool in the status bar's right corner (see Figure 11.5 C).

Zooming the page is another feature IE 7 "borrowed" from Firefox, but its implementation is superior. In Firefox, zooming is a side-effect of changing the text size, but IE 7 lets you use either text-size or zooming adjustments as you prefer to tweak page displays your way.

Feature Rating: ***Zoom***

Printing Web Pages

Trying to print a web page with IE 6 or older web browsers certainly qualifies as "trying." First, you try a regular print, and if it cuts off the right edge of the page (as it almost certainly will), you try adjusting page margins. If that fails, you try switching page orientations. Even if all the text prints legibly, there's a good chance that the graphics that might contain the most important material on the page might get the axe. It's no wonder some printer manufacturers provide special web-page print utilities!

The Microsofties in charge of IE have been listening to your complaints (and adding a bunch of their own, I bet) and have been keeping an eye on the competition, and are fighting back. IE 7 has a collection of better ways to print your web pages—*if* you use the Print Preview option in the Print menu to start your print job.

By default, Print Preview uses Shrink to Fit (see Figure 11.6 A) to adjust overwidth (or too narrow) pages to fit in the margins you specify through the Page Setup menu, which is basically unchanged from Windows XP. You use fixed percentages if you want, but 100% (equivalent to the old Windows XP print method) usually cuts off the right edge of the page. To see additional pages, select the number of pages to view (see Figure 11.6 C).

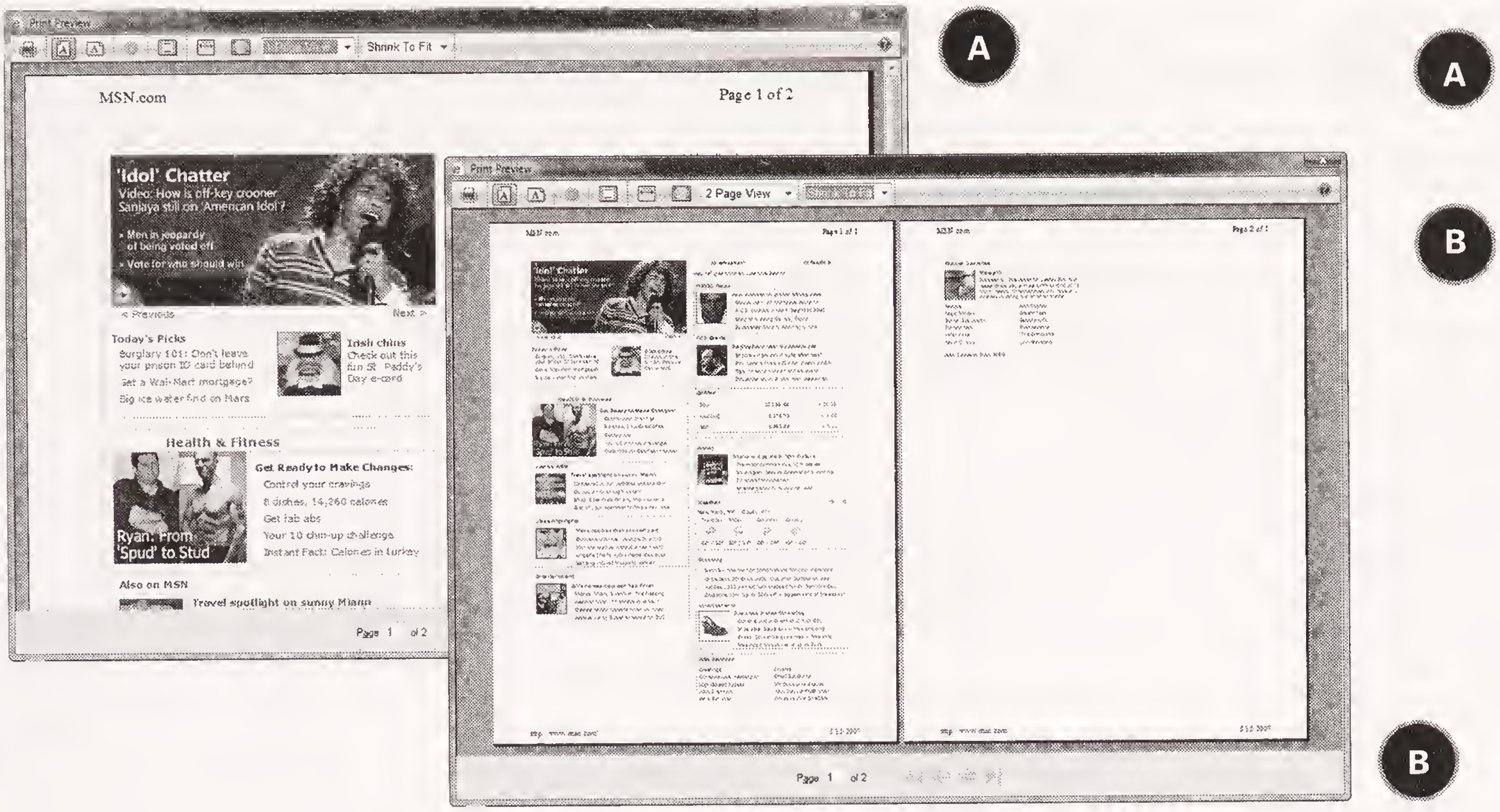
By default, your page view is configured to display the full page (similar to Figure 11.6 C), but with only the first page shown. Use the buttons at the top of the page to switch to full-screen view or to toggle headers and footers on and off. Click the gear icon to adjust margins, page layout, or header/footer settings. The good news is that you won't need to open that menu very often anymore.

TIP

One monitor's wall-to-wall display of a web page is another monitor's waste of white space: It's inevitable as long as different display resolutions are in use. The growing use of widescreen displays makes the web page designer's job even harder. Use Zoom levels above 100% to remove white space and fill the screen with content. If you run into a web page that requires horizontal scrolling, use Zoom levels below 100% to make the page behave.

TIP

Want to save paper when you print a web page? Switch to a multipage view and use a zoom level in Print Preview lower than 100%. You may be able to save one or more pages by printing at a smaller size. For example, when I brought up the MSN Money news page, it took three pages to print at Shrink to Fit, but only two pages at 60%.



A Using Shrink to Fit.

B Viewing a web page that takes more than one page to print.

Figure 11.6

Using Print Preview.

Although IE 7 has, once again, "borrowed" an idea from Firefox, IE 7's implementation of print preview is better than its inspiration. IE 7's ability to display multiple pages in its preview without scrolling makes it much easier to select the pages you need to print.

Feature Rating: ***Printing***

Securing Your Online Experience with IE 7

IE 7 not only looks better and works better, it's more secure as well. With a new protection against browser-based attacks and antiphishing protection, enhanced add-on configuration options along with the pop-up blocker pioneered in IE 6, IE 7 is determined to make your web surfing worry-free.

How Protected Mode Protects Your PC

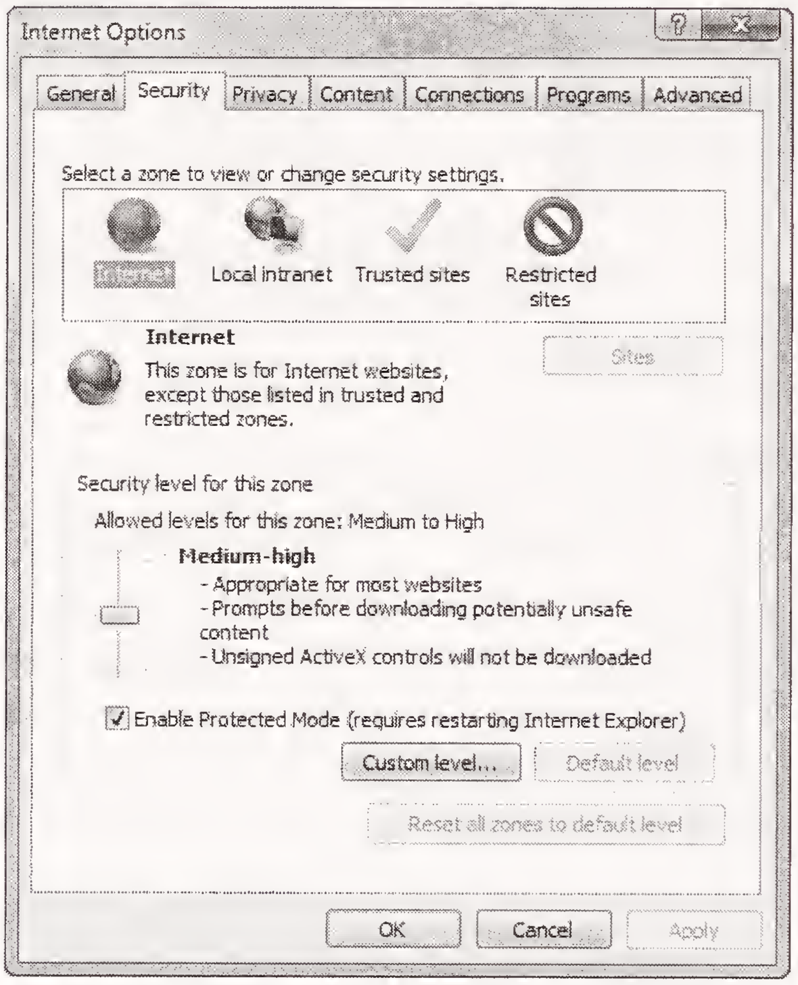
Protected Mode is a brand-new feature in IE 7 that protects your PC from browser-based attacks. Protected Mode is on by default but can be disabled through the Internet Security dialog (see Figure 11.7) (To access this dialog, open IE 7's Tools menu, select Internet Options, and click the Security tab). The status bar at the bottom of the screen indicates whether Protected

Mode is enabled (refer to Figure 11.1). If you disable Protected Mode, the yellow security bar appears just below the tabs to warn you it's disabled. Click the bar to open the Internet Security dialog and reenable Protected Mode.

If a User Account Control (UAC) dialog pops up because a web-based program needs to install and you grant permission, IE 7 disables Protected Mode to permit the program to install and run.

NOTE

You must close and restart your browser after Protected Mode settings change before the new setting takes effect. And, if Protected Mode is disabled because a program required it to be disabled for installation, you must restart your browser to reenable Protected Mode.


Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Internet
Local intranet
Trusted sites
Restricted sites
Sites
Custom level...
Default level
Reset all zones to default level
OK
Cancel
Apply

Select a zone to view or change security settings.

Internet

This zone is for Internet websites, except those listed in trusted and restricted zones.

Security level for this zone

Allowed levels for this zone: Medium to High

Medium-high

- Appropriate for most websites
- Prompts before downloading potentially unsafe content
- Unsigned ActiveX controls will not be downloaded

☑ Enable Protected Mode (requires restarting Internet Explorer)

Figure 11.7

Enable/disable Protected Mode with the Internet Security tab.

Thanks to Protected Mode, you can't say you haven't been warned if a rogue website tries to slip you some bad stuff.

Feature Rating: ***Protected Mode***

IE 7 Stops Phishing

- Dire warnings that your online banking credentials need to be updated
- Problems with your eBay account that need fixing
- Offers of untold wealth through placing your bank account at a foreign jillionaire's service

Inside Protected Mode

Protected Mode is an implementation of the Windows Vista integrity mechanism. Simply put, different processes in Windows Vista have different integrity access levels, and activities normally performed by the web browser are assigned a Low integrity access level (IL). Essentially, Windows Vista doesn't trust the browser (or, more precisely, the websites the browser visits), so the web browser is no longer allowed to change normal Registry keys or to save files in places reserved for the operating system.

To prevent a website from attacking the system, but to permit legitimate changes a website might need to make to permit the website content to run, IE Security displays a warning asking you for permission for the program to run when a program needs a higher level of access. The program is identified in the dialog box, and nothing happens unless you click Allow. Standard users need to provide administrator credentials to permit the web-based program to perform such a task. When you permit access, Protected Mode is disabled until you restart your browser.

For a much more detailed look at how Protected Mode works, including scripts and Registry modifications that can change how it works, see *Understanding and Working in Protected Mode Internet Explorer* at the MSDN library: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/ietechcol/dnwebgen/protectedmode.asp.

Your emailbox is probably full of these and similar phishing schemes. Although Vista's new Windows Mail email client also includes antifraud features, it's nice to know that IE 7 can stop you from getting scammed, even if you use an email client other than Windows Mail.

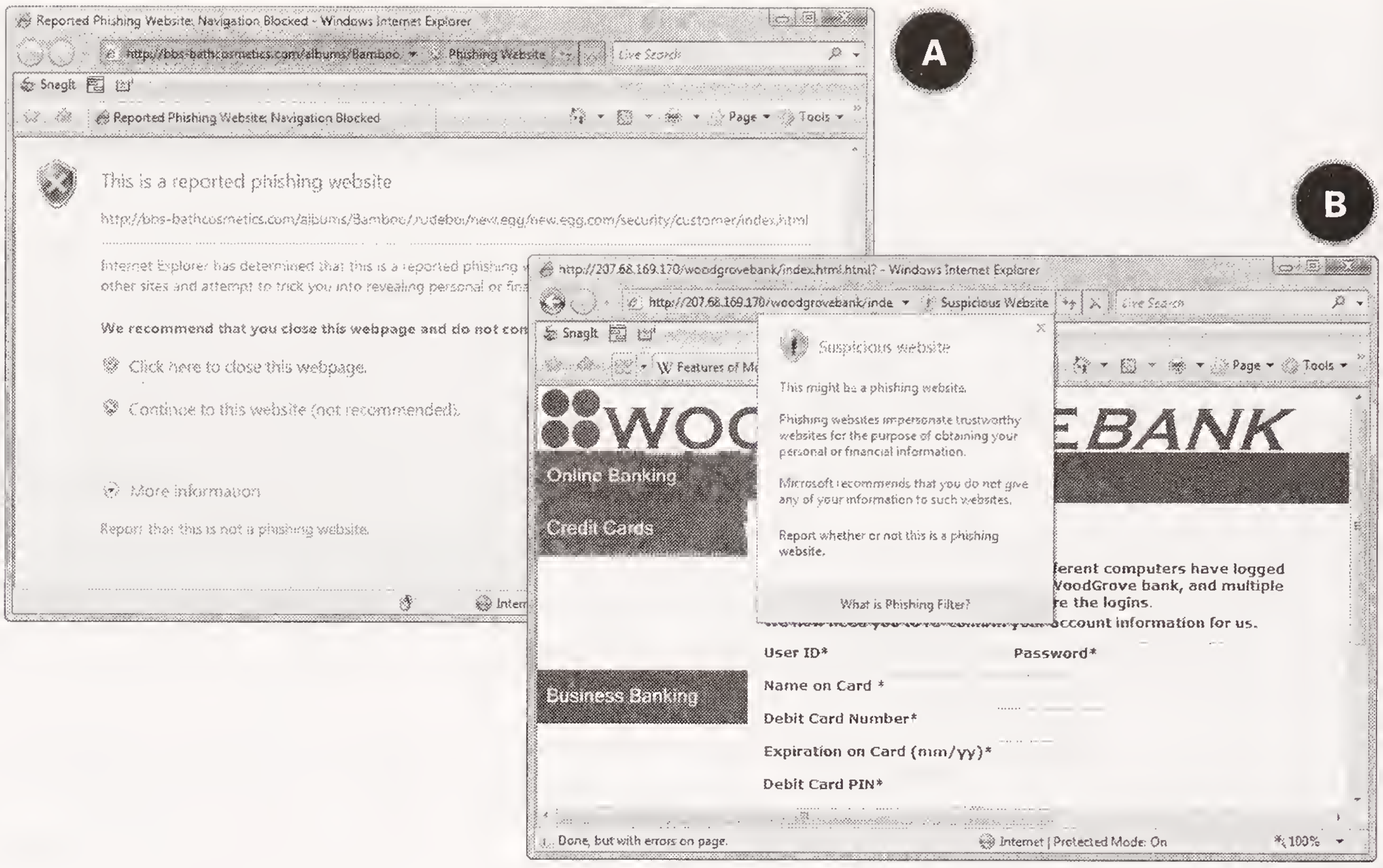
Phishing refers to the use of fraudulent emails and websites to steal financial or personal identification information from unwary users. Typically, a phishing attempt starts with an email purporting to be from a financial, e-commerce or governmental institution that warns of a problem with your account or identity information. A link in the email directs you to an official-looking website set up by the scammers that captures your information when you log in in response to the original email message.

According to Webopedia (www.webopedia.com), the term *phishing* was first used in 1996 by hackers who were stealing AOL account access with fake emails. The problem has only gotten worse over the last decade.

IE 7 includes an optional, highly effective antiphishing filter that intercepts attempts to access known (see Figure 11.8 A) or suspected (see Figure 11.8 B) phishing websites.

A Known phishing sites are blocked.

B Suspected phishing sites are tagged with a warning.


A
B
Reported Phishing Website: Navigation Blocked - Windows Internet Explorer
http://bbs-bathcosmetics.com/albums/Bamboo
Phishing Website
Live Search
SnagIt
Reported Phishing Website: Navigation Blocked
Page
Tools
http://207.68.169.170/woodgrovebank/index.html.html? - Windows Internet Explorer
http://207.68.169.170/woodgrovebank/inde
Suspicious Website
Features of M
WOO
EBANK
Online Banking
Credit Cards
Business Banking
Done, but with errors on page.
Internet | Protected Mode: On
100%

This is a reported phishing website

http://bbs-bathcosmetics.com/albums/Bamboo/rudeboi/new.egg/new.egg.com/security/customer/index.html

Internet Explorer has determined that this is a reported phishing
other sites and attempt to trick you into revealing personal or fin

We recommend that you close this webpage and do not con

Click here to close this webpage.

Continue to this website (not recommended).

More information

Report that this is not a phishing website.

Suspicious website

This might be a phishing website.

Phishing websites impersonate trustworthy websites for the purpose of obtaining your personal or financial information.

Microsoft recommends that you do not give any of your information to such websites.

Report whether or not this is a phishing website.

What is Phishing Filter?

ferent computers have logged
VoodGrove bank, and multiple
re the logins.
ccount information for us.

User ID*
Password*
Name on Card *
Debit Card Number*
Expiration on Card (mm/yy)*
Debit Card PIN*

Figure 11.8

IE 7's antiphishing filter at work.

As you can see in Figure 11.8 A, IE 7 blocks access to known phishing sites. You can proceed to the site only by clicking on the Continue to This Website link. If a site is suspected of being a phishing site, IE 7 displays it in the browser but changes the address bar's background to yellow, and pops up a Suspicious Website warning, as in Figure 11.8 B.

NOTE

To learn more about Digital Resolve, visit the Digital Resolve website at http://www.digital-resolve.net.

How does IE 7 know which sites are which? Microsoft uses Trusted Server data provided by Digital Envoy's Digital Resolve unit to determine known phishing websites. Digital Resolve performs data-mining operations to determine the authenticity of e-commerce and other types of websites that are commonly mimicked by phishers.

It's important to realize that the Phishing Filter is not turned on by default: You must enable it yourself, either the first time you run IE 7 after installing Windows Vista, or by opening the Tools menu, selecting Phishing Filter, and selecting Turn On Automatic Website Checking. Select On, click OK, and you're protected.

The Phishing Filter option in IE 7's Tools menu not only turns on (or turns off) the filter, but also provides three ways to cope with phishers:

- Check This Website—Use this option to send the current website to Microsoft for a determination of its phishing status—*if* you are not using automatic website checking.

Taking the Fight to the Phishers: The Next Steps

Although IE 7's antiphishing features are powerful, there might still be a lag between the time that a phishing website goes up and when it is blocked by IE 7. One way to further protect yourself is to check the latest phishes submitted to the PhishTank information clearing house run by OpenDNS. PhishTank not only lists IP address/URL information for suspected phishing sites but also displays a real-time screenshot of submitted sites (when possible) and technical details for each submitted site.

When I entered a selection of URLs submitted to PhishTank into IE 7, some URLs submitted on the current day were not yet flagged by IE 7 as suspicious or known sites, but sites a day or two old or older (in terms of when they were submitted to PhishTank), were appropriately flagged or blocked. This is not a criticism of IE 7, but simply a reminder that because of how IE 7's antiphishing feature is powered that there will be a small window of opportunity for a phishing site to work without being blocked by IE 7.

You can submit suspicious websites to PhishTank through its website, http://www.phishtank.com. PhishTank provides real-time information about suspected and verified phishing sites through a freely available API, the home page of its website, and XML feeds.

The CastleCops security website and Sunbelt Software offer another tool for phish fighters, the Phishing Incident Reporting and Termination (PIRT) Squad. Submit suspected phish emails and URLs at http://www.castlecops.com/pirt, and PIRT will attempt to take down verified phishers.

- Report This Website—If the website seems suspicious, don't call 911, click this option instead. A secure new browser window opens, listing the website URL. Select the language the website uses, click the check box to indicate you think the website is a phishing site, and click Submit. Enter the characters shown in the verification window, click Continue, and, after you receive the confirmation message, close the window. And, if you're smart, close the browser tab containing the suspected phishing site!
- Phishing Filter Settings—Use this option to verify your Phishing Filter settings in the Advanced tab of the Internet Options dialog. Scroll down to Phishing Filter. If automatic website checking is on, the filter is enabled and checks websites automatically. If automatic website checking is off, you must check websites manually. If Phishing Filter is disabled, you cannot check websites manually or automatically. You must

select one of the website checking options to reenable Phishing Filter. Click Apply and then click OK, if you make changes.

If you enable the anti-phishing filter, IE 7 provides strong protection against phishing.

Feature Rating: ***Phishing Filter***

WARNING

It may be difficult to believe, but Windows Vista's Security Center does not monitor settings for the Phishing Filter. Even if it's disabled, Security Center will give your Internet safety a clean bill of health if your Internet Options dialog is appropriately configured.

The only way to tell whether IP 7 is configured to stop phishing is to use the Tools menu in IE 7. You have been warned.

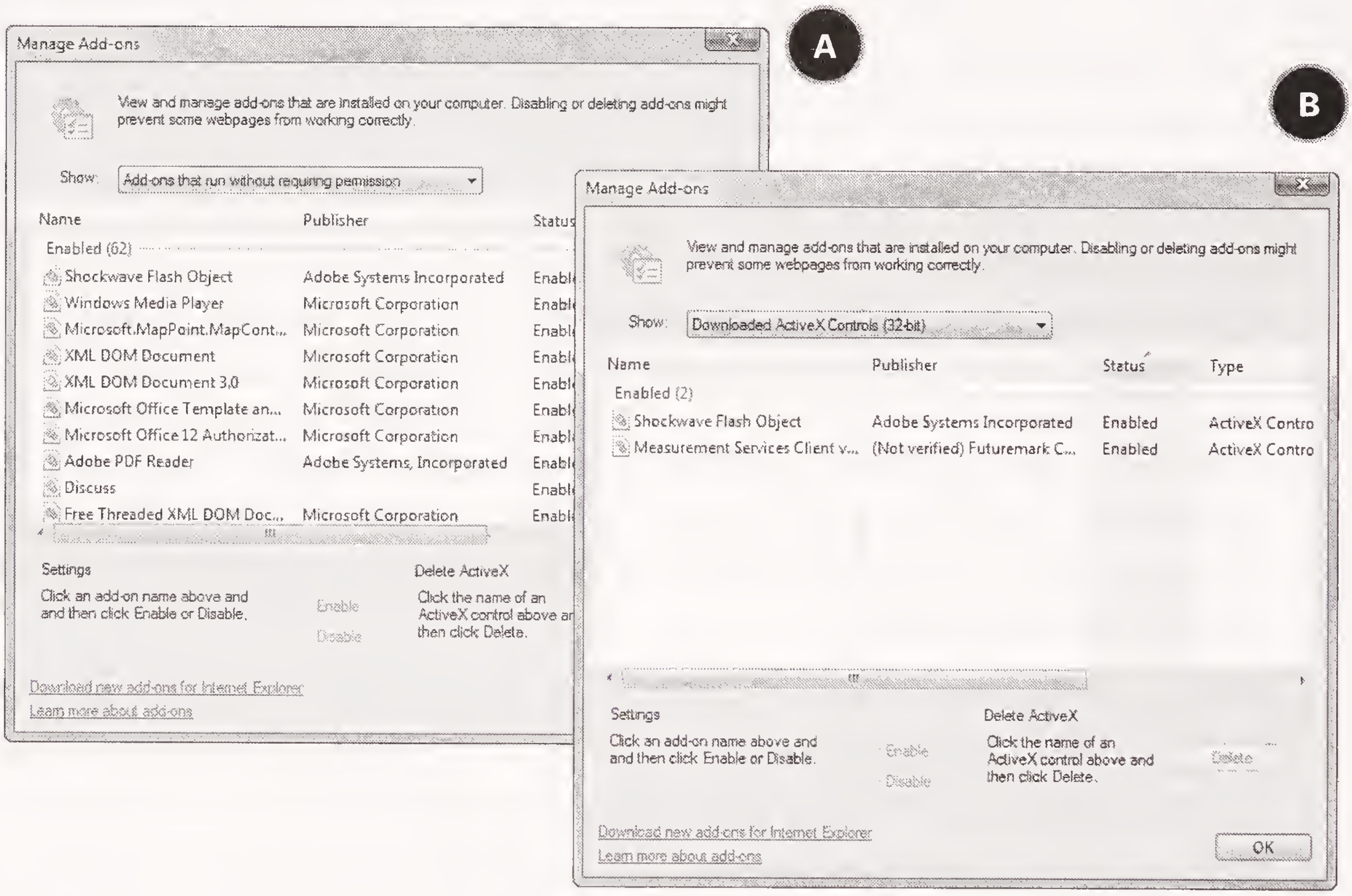
Managing Pop-Ups and Add-Ons

IE 7's pop-up manager is virtually identical to the one provided in IE 6: It provides three filter levels, can be used to create a whitelist of sites that can display pop-ups, and offers keyboard options for temporarily overriding the current pop-up filter setting so that pop-ups can be viewed.

However, IE 7's add-on manager is significantly more powerful than its IE 6 predecessor. IE 7's add-on manager not only manages add-ons currently in use and add-ons that have been loaded by IE, but also manages add-ons that run without permission (see Figure 11.9 A) and downloaded ActiveX controls (see Figure 11.9 B).

A Managing add-ons that run without permission.

B Managing downloaded ActiveX controls.



Manage Add-ons

View and manage add-ons that are installed on your computer. Disabling or deleting add-ons might prevent some webpages from working correctly.

Show: Add-ons that run without requiring permission

Name	Publisher	Status
Enabled (62)		
Shockwave Flash Object	Adobe Systems Incorporated	Enabl
Windows Media Player	Microsoft Corporation	Enabl
Microsoft.MapPoint.MapCont...	Microsoft Corporation	Enabl
XML DOM Document	Microsoft Corporation	Enabl
XML DOM Document 3.0	Microsoft Corporation	Enabl
Microsoft Office Template an...	Microsoft Corporation	Enabl
Microsoft Office 12 Authorizat...	Microsoft Corporation	Enabl
Adobe PDF Reader	Adobe Systems, Incorporated	Enabl
Discuss		Enabl
Free Threaded XML DOM Doc...	Microsoft Corporation	Enabl

Settings
Click an add-on name above and and then click Enable or Disable.

Delete ActiveX
Click the name of an ActiveX control above ar then click Delete.

Manage Add-ons

View and manage add-ons that are installed on your computer. Disabling or deleting add-ons might prevent some webpages from working correctly.

Show: Downloaded ActiveX Controls (32-bit)

Name	Publisher	Status	Type
Enabled (2)			
Shockwave Flash Object	Adobe Systems Incorporated	Enabled	ActiveX Contro
Measurement Services Client v...	(Not verified) Futuremark C...	Enabled	ActiveX Contro

Settings
Click an add-on name above and and then click Enable or Disable.

Delete ActiveX
Click the name of an ActiveX control above and then click Delete.

Figure 11.9

New features in IE 7's add-on manager.

As these figures show, you also get a count of the number of add-ons in each category, a nice touch you can use to give you a "heads-up" if new add-ons have been added since the last time you checked.

Not only can you enable or disable a selected add-on, but you can also search for additional add-ons by clicking the Download New Add-ons link in the Add-ons dialog or by clicking Find More Add-ons from the Tools menu's Manage Add-ons submenu. When you select one of these links, you open the Windows Marketplace IE Add-Ons page. Add-ons are divided into four categories: security, time savers, browsers, and entertainment, and both free and commercial add-ons are available.

Thanks to the IE 7 Add-on Manager, you no longer need to be in the dark about the add-ons running on your system.

Feature Rating: ***Add-on Manager***

Troubleshooting Add-Ons

If IE 7 is giving you trouble, a rogue add-on might actually be to blame. Here's how to get to the source of the problem—fast.

To determine whether add-ons are to blame, start IE 7 without add-ons. Here's how: click the Start orb, All Programs, Accessories, System Tools, and select Internet Explorer (no add-ons). If IE 7 works fine without add-ons, it's time to determine which add-on is to blame.

Start IE 7 normally, then disable one or more add-ons at a time (starting with the most recently used) until you determine which add-on is at fault. Leave it disabled, and re-enable the rest.

New and Improved Internet Options

The general appearance of IE 7's Internet Options (also available from Control Panel's Network and Internet category as Internet Options) is similar to IE 6's version. However, there are some significant differences:

NOTE

The MSDN IE Blog offers its list of favorite add-ons at http://blogs.msdn.com/ie/archive/2006/10/20/must-have-add-ons-for-ie7.aspx. The home page for the IE blog is located at http://blogs.msdn.com/ie/; check it out for tips, news, and much more about IE 7.

TIP

The default listing for add-ons shown in Figure 11.9 doesn't include any date information, but by right-clicking an empty section of the listing, you can select a Sort By option. Select More, choose the Last Accessed and Used columns, and click OK to display these columns in the listing. Scroll to the right to see them.

The Last Accessed column displays the last time IE 7 used the add-on, and the Used column displays the number of times the add-on was used. Enabling these columns before you start disabling add-ons makes it easier to determine the most likely causes for your problem.

NOTE

The Restore Advanced Settings button on the Advanced tab resets only the options found on that tab. The Reset button wipes out temporary files, disables browser add-ons, and resets all dialogs to their defaults. Save that one for big, BIG problems with your browser.

- The General tab features a new Browsing History category (combining the features of the IE 6 Temporary Internet Files and History categories), a new Search Defaults option, and a new Tabbed Browsing option.
- The Security tab offers a new option for enabling/disabling IE 7's new Protected Mode.
- The Content tab offers new options, including Parental Controls and Feeds, and an improved content advisor dialog.
- The Advanced tab features new options for configuring how zooming, tabbed views, ClearType for HTML pages, phishing filters, and other new IE 7 features work.

For more information about enabling and disabling Protected Mode, see "How Protected Mode Protects Your PC," this chapter, p. 275.

What's new and different? As always, follow along to find out!

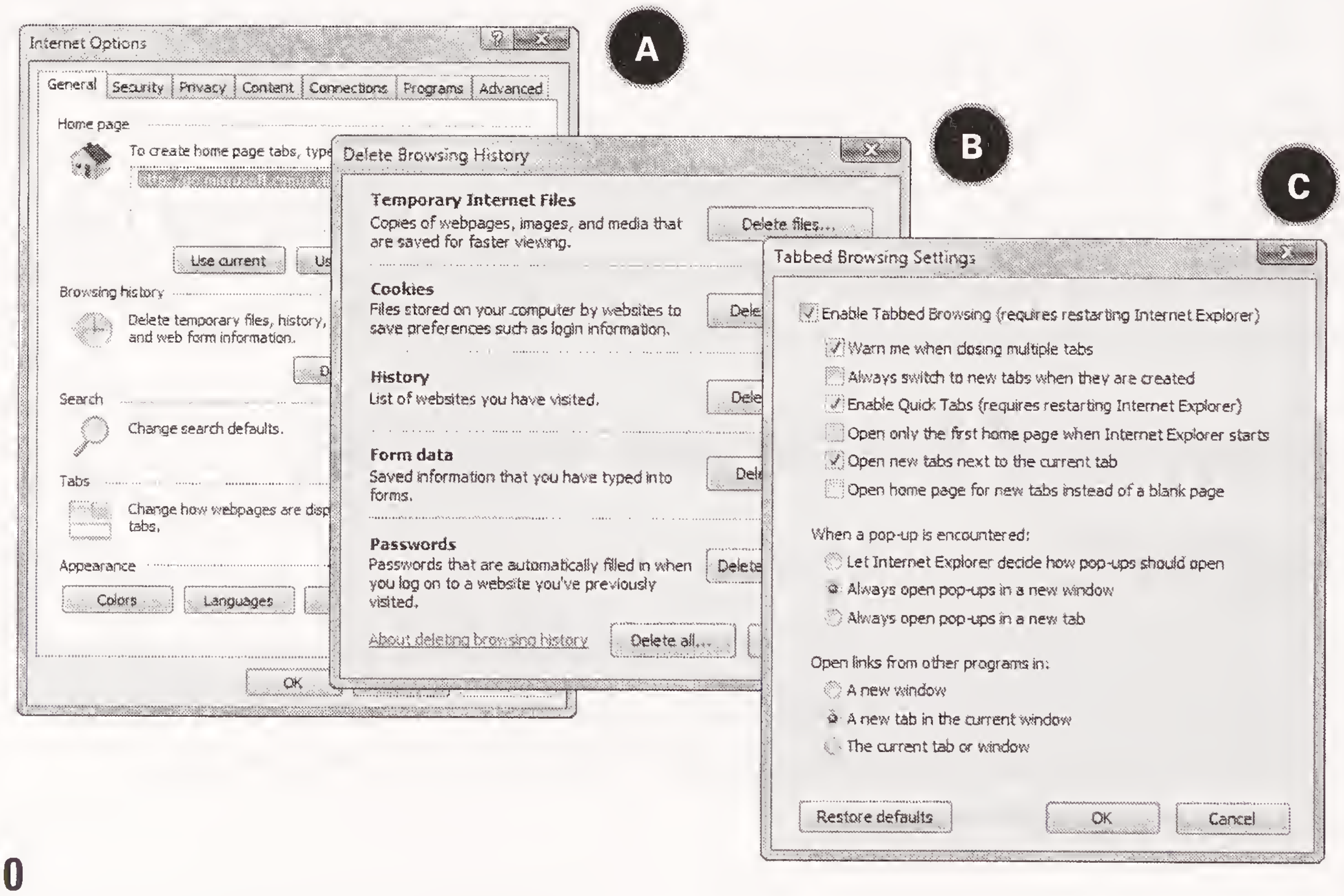
Configuring and Using New General Options

The General tab (see Figure 11.10 A) features a new Browsing History category (see Figure 11.10 B) that combines the features of the IE 6 Temporary Internet Files and History categories, a new Search Defaults option, and a new Tabbed Browsing option (see Figure 11.10 C).

A The General tab.

B History and file deletion options.

C Tabbed browser settings options.



To create home page tabs, type

Delete temporary files, history, and web form information.

Change search defaults.

Change how webpages are disp tabs.

Temporary Internet Files
Copies of webpages, images, and media that are saved for faster viewing.

Cookies
Files stored on your computer by websites to save preferences such as login information.

History
List of websites you have visited.

Form data
Saved information that you have typed into forms.

Passwords
Passwords that are automatically filled in when you log on to a website you've previously visited.

About deleting browsing history

☑ Enable Tabbed Browsing (requires restarting Internet Explorer)
  ☑ Warn me when closing multiple tabs
  ☐ Always switch to new tabs when they are created
  ☑ Enable Quick Tabs (requires restarting Internet Explorer)
  ☐ Open only the first home page when Internet Explorer starts
  ☑ Open new tabs next to the current tab
  ☐ Open home page for new tabs instead of a blank page

When a pop-up is encountered:
○ Let Internet Explorer decide how pop-ups should open
● Always open pop-ups in a new window
○ Always open pop-ups in a new tab

Open links from other programs in:
○ A new window
● A new tab in the current window
○ The current tab or window

Figure 11.10

Using the General tab of the Internet options dialog.

The General tab's new Browsing History category has two buttons: Settings and Delete. Click the Settings button to adjust how often to check for new pages, how much disk space to use for downloaded pages, where temporary pages are stored, and how long to keep visited pages in the history listing. This dialog is pretty much a rehash of the old IE 6 dialogs. However, click the Delete button, and you see five ways to keep your web activities private: You can now delete your form data and passwords from this dialog, as well as delete temporary Internet files, cookies, and history. Click Delete All and confirm deletion to send them all away, or click the individual delete buttons as you deem fit.

WARNING

Although the Delete button bypasses Windows Vista's Recycle Bin, don't kid yourself: Your temporary Internet and other files are still on the hard disk. Data-recovery tools can undelete them (as long as you haven't overwritten the disk space used by the files). If you absolutely, positively, *must* cover your web-surfing tracks against determined snooping, you need to overwrite the "empty" portions of the hard disk with a disk wiping utility after you delete your files.

By default, IE 7 uses Microsoft's new Live Search website for web-based searches. If you install additional search providers and want to make an alternative search provider the default, click the Settings button in the Search section of the General properties tab. Select an alternative search provider from the Change Search Defaults dialog and click Set Default. To kick a search provider "off the island," select it and click Remove.

Don't like the way tabbed browsing works? In the immortal words of the Monarch of Meat, "Have it your way!" Click the Settings button in the Tabs section of the General tab if you want to disable tabbed browsing, change how tabbed browsing works, and adjust how pop-ups and links are handled. If you change the defaults and decide you've made a hash of things, click the Restore Defaults button to put everything right again.

New Content Control and Feeds Features

The Content tab (see Figure 11.11 A) features two new options: Parental Controls and Feeds, and also offers a considerably enhanced Content Advisor.

⇨ For more information about working with Parental Controls, see "Using Parental Controls," Chapter 14, p. 333.

Click the Settings button in the Feeds section of the Content tab to open the Feed Settings dialog. Use it to specify how often to check for fresh feeds: You can choose from intervals ranging from every 15 minutes to every week, with daily as the option. Other options specify whether to mark a feed as read, whether to automatically turn on the feed reading view, and whether to play a sound when a feed is found on a webpage (disabled, thankfully, by default).

TIP

Unlike Parental Controls, which only affect selected users with Standard accounts, enabling Content Advisor affects all users, regardless of status. To make sure you don't lock yourself out of a website you need to access by enabling Content Advisor, be sure to set up a password with the General tab—and, of course, keep it away from the kids.

Click Enable to open the multitabbed Content Advisor dialog. The Ratings tab (see Figure 11.11 B) shows that IE 7 uses ratings provided by ICRA3, a part of the Family Online Safety Institute (http://www.fosi.org/icra/). The ICRA3 rating system is supposed to offer much more control over website content than the older RSACi system used in IE 6.

By default, Content Advisor is configured to block all ICRA3-compliant web pages that include content in the restricted areas, or a site that does not have an ICRA3 rating. To tweak the degree of control for a particular content area, select it and adjust the slider. You can select None, Limited, or Unrestricted for some types of content, and for others, the selections include None, Limited, Some, or Unrestricted.

After enabling and adjusting Content Advisor settings, be sure to open the other tabs to complete the configuration. You can create a whitelist of approved sites and a blacklist of disapproved sites with the Approved Sites dialog. Click the General tab to set up a supervisory password, which enables you to bypass Content Advisor filters, and to install or remove rating systems. Use the Advanced tab if you want to install PICS rules for further filtering Internet access.

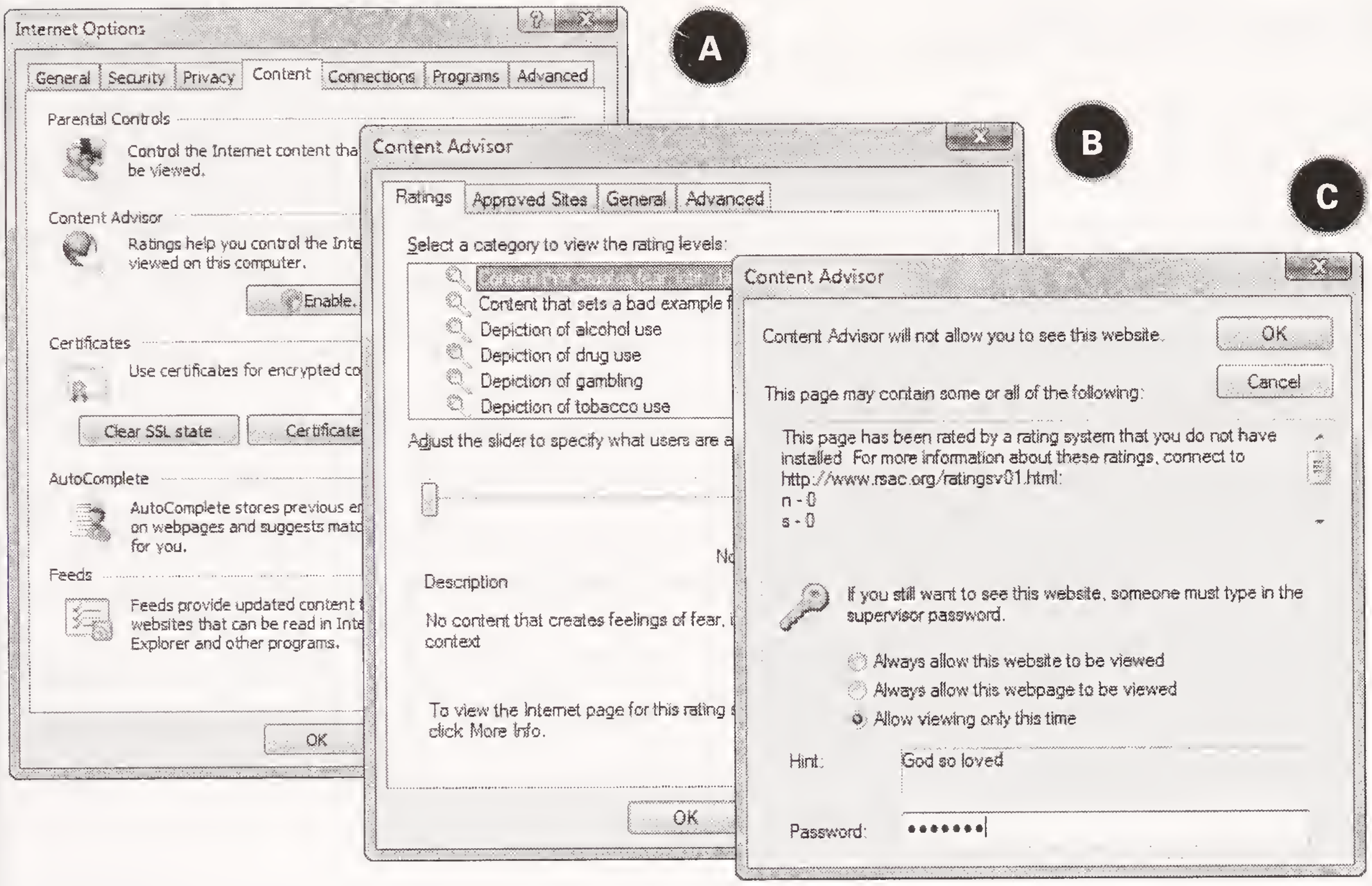
After making changes (as needed) to Content Advisor dialogs, click Apply and then click OK, to put Content Advisor into action.

When anyone attempts to access a website, Content Advisor checks for an ICRA3 rating. If the page is not rated, it uses a different rating system or trips an ICRA3 rating flag, causing a dialog to appear. Enter the Content Advisor supervisor password to view the page and select whether you want to view the page just one time, view all the time, or permit access to the entire website (see Figure 11.11 C).

Does Content Advisor work? Not the way it ought to, but it's not entirely Microsoft's fault. Whether you stick with the installed rating system or install a second rating system such as SafeSurf, the real problem is the lack of cooperation from website builders, including Microsoft!

TIP

If you want to protect your kids from the garbage on the Internet, forget about Content Advisor: Set up each child with a Standard account, enable Parental Controls for that account, and use its website filter and report options. Parental Controls really work; I wish Content Advisor did.


A
B
C
Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Parental Controls
Control the Internet content tha
be viewed.
Content Advisor
Ratings help you control the Inte
viewed on this computer.
Enable.
Certificates
Use certificates for encrypted co
Clear SSL state
Certificate
AutoComplete
AutoComplete stores previous en
on webpages and suggests matc
for you.
Feeds
Feeds provide updated content f
websites that can be read in Inte
Explorer and other programs.
OK
Content Advisor
Ratings
Approved Sites
General
Advanced
Select a category to view the rating levels:
Content that sets a bad example f
Depiction of alcohol use
Depiction of drug use
Depiction of gambling
Depiction of tobacco use
Adjust the slider to specify what users are a
No
Description
No content that creates feelings of fear, i
context
To view the Internet page for this rating s
click More Info.
OK
Content Advisor
OK
Cancel

Content Advisor will not allow you to see this website.

This page may contain some or all of the following:

This page has been rated by a rating system that you do not have installed For more information about these ratings, connect to http://www.rsac.org/ratingsv01.html:
n - 0
s - 0

If you still want to see this website, someone must type in the supervisor password.

○ Always allow this website to be viewed
○ Always allow this webpage to be viewed
● Allow viewing only this time

Hint: God so loved

Password: •••••••

A The Content tab.

B Content Advisor's ratings tab.

C Overriding Content Advisor's blocking of a website.

Figure 11.11

Using the Content tab.

Believe it or not, the MSN website triggers an alert because the site doesn't have a rating, so you must enter your Content Advisor supervisor password to view the site. The problem is, many other websites (including some adults-only ones such as Playboy.com) don't provide the appropriate ratings either, so they aren't blocked for content. To make matters even worse, because there are a variety of rating systems, even innocuous sites such as Encarta.com may use an older version of the rating system and (you guessed it) trigger a page blocking message! The end result: You'll spend so much time entering your Content Advisor password you'll be ready to disable the feature (which, of course, requires that you once again enter the password!).

Feature Rating: ***Content Advisor***

IE 7 Best and Worst Practices

With the new features in IE 7, it's time to take a new look at how you've been doing things. This section helps you take full advantage of IE 7's new features.

IE 7 Best Practices

- Organize your favorites—By organizing your favorites into related folders, you make it possible to open several websites with a single click through the Favorites Center. Use the Organize Favorites dialog to create new folders, move favorites to a particular folder, and, while you're at it, to delete favorites that no longer point to a valid web page.
- Use the Tab Set as Home Page option in the Home Page menu to open your favorite pages automatically—Open each page you like to visit when you start your computer in its own tab. Select Add or Change Home Page, and select Use the Current Tab Set as Your Home Page.
- Use right-click link power—The right-click link menu now lets you open a link in either a new tab or a new window. Use a new tab if you want to create a tab group; open a new window if you want to use Alt+Tab or Windows+Tab to select the window.
- Compare search provider results—Because the Search window in IE 7 remembers what you're searching for when you select different search providers, it's easy to determine which search providers give you the best results. Keep in mind that different providers have different strengths.
- Use zoom to tweak pages for different needs—The Zoom tool makes it easy to enlarge a page onscreen (to magnify both text and graphics) or shrink it (so you can see more of a page at a time). If you're using IE 7 in a group situation, use Zoom to optimize the display for your users.
- Set up new windows for easy switching—If you need to use Alt-Tab or Win-Tab to switch between websites, create new windows with Ctrl-N or click Page, New Window.

IE 7 Practices to Avoid

IE 7 adds a lot of power to browsing, but it will go to waste if you don't take advantage of what it does differently—and better. Use this section to help you shed old browsing habits.

- Don't print without previewing—With the power available for fitting a web page to paper in IE 7, it's idiotic to just click Print and hope for the best. Even though IE 7 defaults to Shrink to Page, it still pays to take a moment with the Print Preview tool and satisfy yourself that you're getting the best print layout. You can also use Print Preview to determine if you need to print all parts of a web page.

- Don't open favorite websites manually—Instead of picking your favorite websites from the Favorites menu every time, or typing in the initial characters to bring up a history list to choose from, organize them into a folder you can open with a single click.

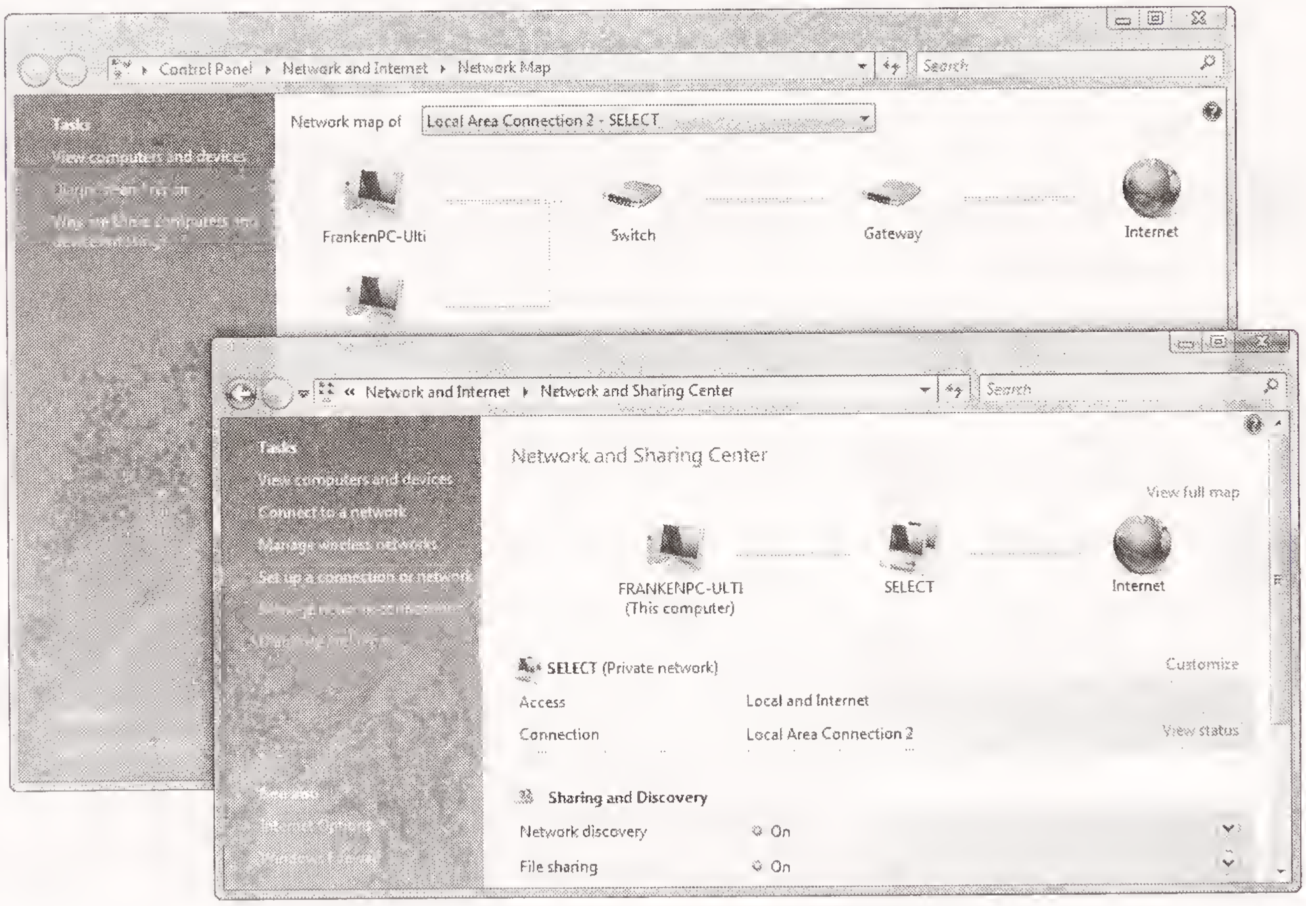
Chapter Twelve

Building a Home Network the Windows Vista Way

IN THIS CHAPTER

- How Vista Makes Home Networking Better
- Connecting to a Wireless Network
- Using the Network and Sharing Center
- Sharing Folders and Printers
- Networking Best and Worst Practices

How Vista Makes Home Networking Better


Control Panel ▸ Network and Internet ▸ Network Map
Search
Tasks
View computers and devices
FrankenPC-Ulti
Switch
Gateway
Internet
Network and Internet ▸ Network and Sharing Center
Search
Tasks
View computers and devices
Connect to a network
Manage wireless networks
Set up a connection or network
Network and Sharing Center
View full map
FRANKENPC-ULTI
(This computer)
SELECT
Internet
Customize
View status
Sharing and Discovery

Network map of: Local Area Connection 2 - SELECT

SELECT (Private network)

Access: Local and Internet

Connection: Local Area Connection 2

Network discovery: On

File sharing: On

By this time, it's probably no surprise to read "In Windows Vista, ________ has gone through major changes." Just as you might expect, you can fill in the word "networking" in the blank provided. So, just what is it that makes Windows Vista networking different?

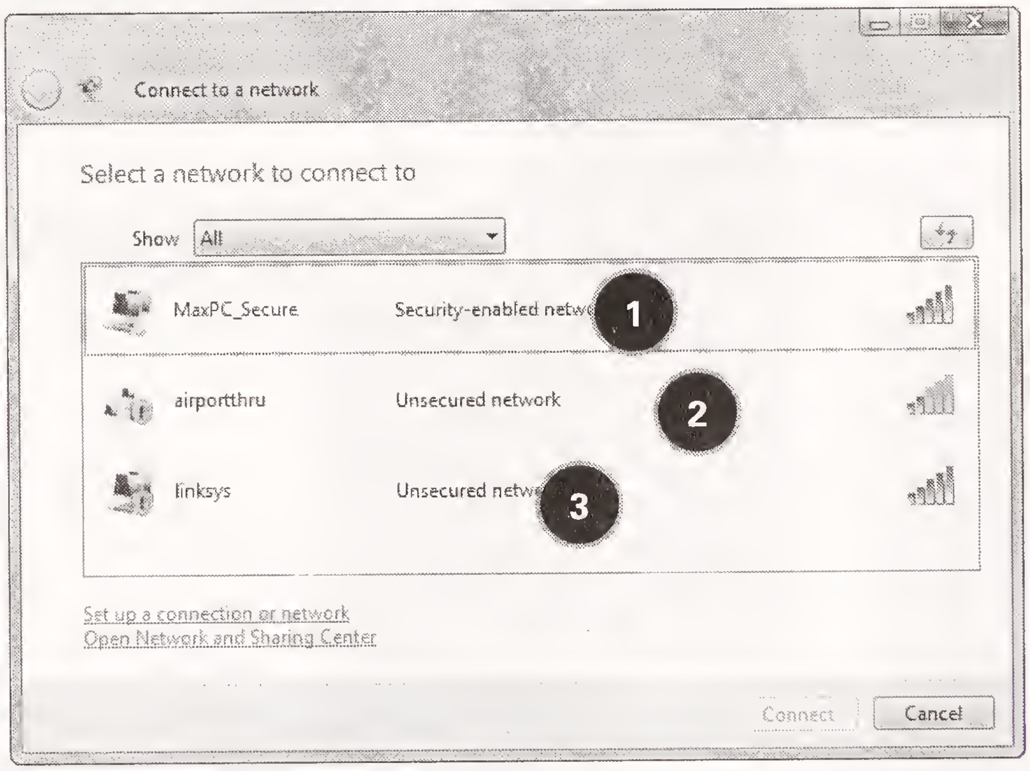
- Windows Vista includes a unified Network Setup Wizard for any type of network.
- The new Network folder replaces My Network Places and provides new tools for managing networks.

- Windows Vista systems can use each other's shared resources, even if they don't belong to the same workgroup.
- The new Network and Sharing Center provides a control center for file sharing, media sharing, network discovery, and network mapping.

With more computers running on networks than ever before, Windows Vista changes how networking works, and mainly for the better.

Connecting to a Wireless Network

Windows XP first made connecting to a wireless network with a broadcast SSID easy. Windows Vista continues the tradition. To connect to a wireless network that uses a broadcast SSID, open the Start menu and select the Network Explorer. Below the Network Explorer menu bar, you see a yellow information bar stating "This computer is not connected to a network. Click to connect." When you click the connection bar, available networks are displayed. Figure 12.1 illustrates three types of network connections: unsecure infrastructure, secure infrastructure, and ad-hoc.



Select a network to connect to

MaxPC_Secure Security-enabled netw

airportthru Unsecured network

linksys Unsecured netw

Connect to a network
Show All
1
2
3
Set up a connection or network
Open Network and Sharing Center
Connect
Cancel

1 Secure infrastructure network.

2 Unsecure ad-hoc network.

2 Unsecure infrastructure network.

Figure 12.1

Types of wireless network connections.

To connect to an unsecure network, select the network connection and click Connect. A security warning is displayed when you attempt to connect to an unsecure wireless network (see Figure 12.2 A). Click Connect Anyway to complete the connection, click Connect to a Different Network to try a different network, or click Cancel to stop the process.

NOTE

Infrastructure wireless networks use a wireless router or access point to connect wireless clients. Ad-hoc wireless networks create direct connections between wireless clients.

To connect to a secure infrastructure network for the first time, select the network connection and click Connect. Enter the security key or passphrase when prompted (see Figure 12.2 B), and click Connect to make the connection.

The option to insert a USB flash drive to bring in network settings supports Microsoft's Connect Now technology, first introduced in Windows XP SP2's Wireless Network Setup Wizard. Connect Now uses a USB flash drive to store network settings for transport between systems and the wireless router.

After you connect to an infrastructure network, the connection is saved automatically for reuse, and the connection is started automatically by default. Clear the check marks to disable either or both options (you can also save the connection to an ad-hoc network). Click Close.

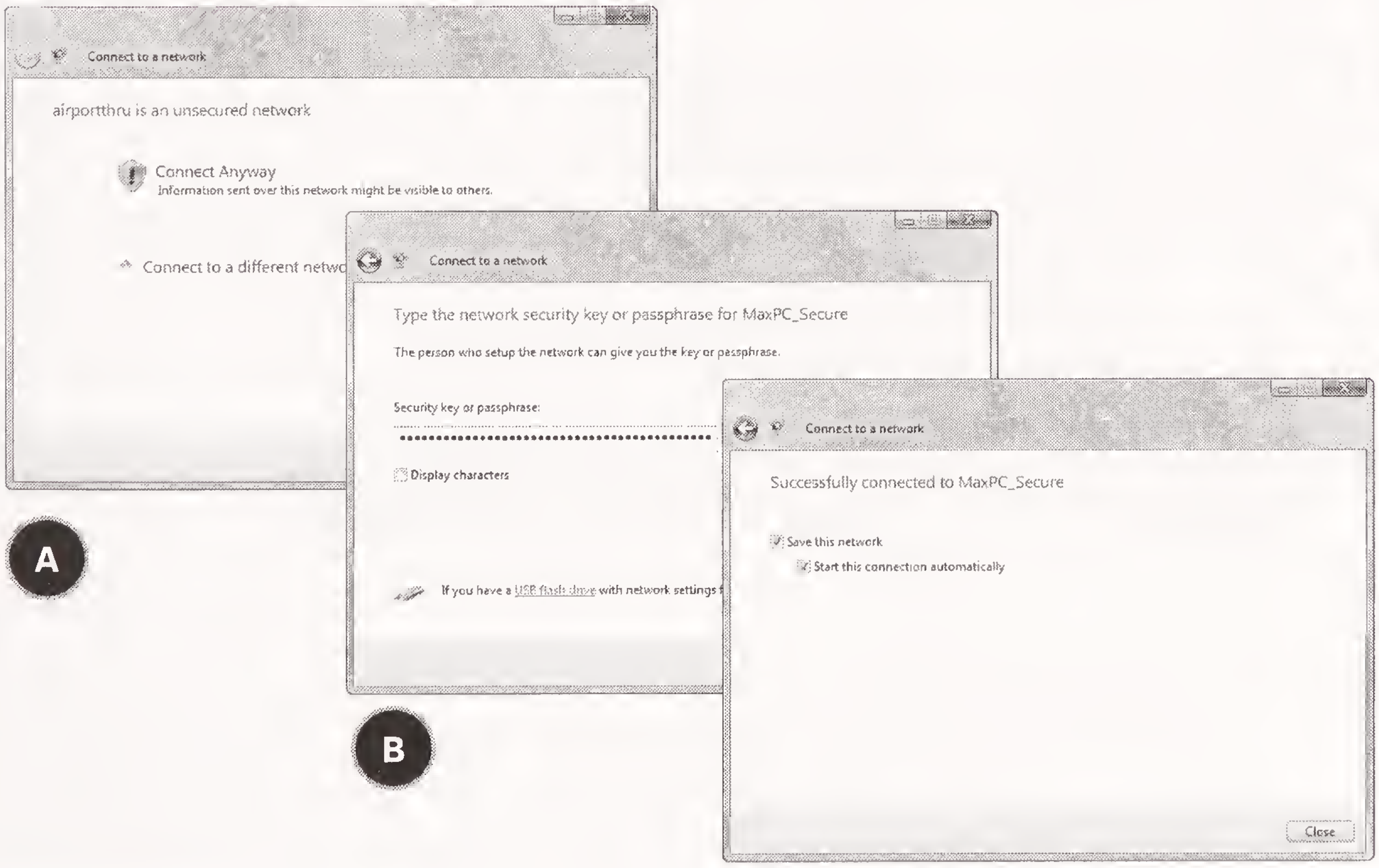
After you complete the connection process, you are prompted to select a network type.

For details, see " Set Network Location," this chapter, p. 293.

NOTE

Before you attempt to connect to a secure wireless network with Windows Vista, make sure you know the network's SSID, encryption type, and encryption key.

If you are attempting an ad-hoc direct connection with another system, you also need to know the channel used for the connection (with IEEE 802.11g and b, channels 1, 6, and 11 are the only channels that do not have significant overlap issues with each other and are recommended for best performance).



airportthru is an unsecured network

Connect Anyway
Information sent over this network might be visible to others.

Connect to a different netwo

Type the network security key or passphrase for MaxPC_Secure

The person who setup the network can give you the key or passphrase.

Security key or passphrase:
••

☐ Display characters

If you have a USB flash drive with network settings

Successfully connected to MaxPC_Secure

☑ Save this network
☑ Start this connection automatically

A Connecting to an unsecure network.

B Setting up the connection to a secure network.

Figure 12.2

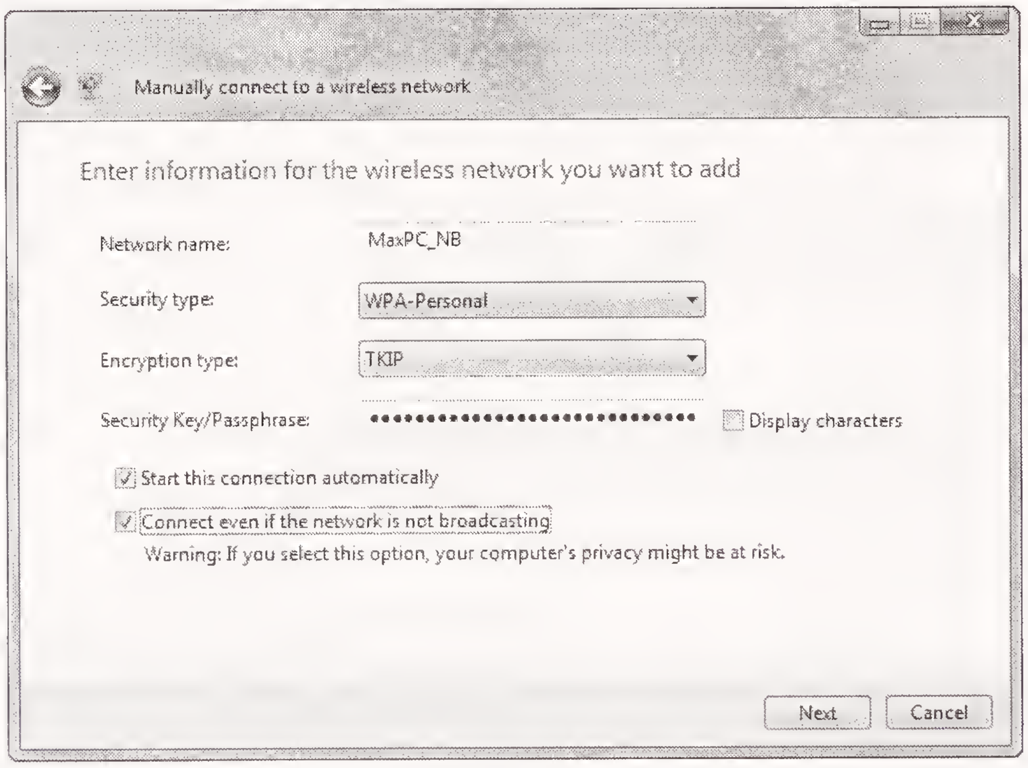
Connecting to a wireless network.

Connecting to a "Hidden" Wireless Network

Many businesses and homeowners prefer to configure their wireless networks so that the SSID is not broadcast, creating a "hidden" wireless network that some believe is more difficult to hack. In some cases, an unsecured wireless network that doesn't broadcast its SSID may be displayed as an Unnamed Network in the Connect to a Network dialog (refer to Figure 12.2 A). To connect to the network, select it, and click Connect. Provide the SSID and click Next. Click Connect Anyway, and choose whether to save the network and automatically connect to it when prompted.

If the network is not displayed, click the Set Up a Connection or Network link shown in Figure 12.1, choose Manually Connect to a Wireless Network from the connection options shown, and click Next.

Enter the network name (SSID), security type, encryption type, and security key/passphrase when prompted (see Figure 12.3). Select the Start This Connection Automatically check box to make a connection to this network whenever it is available. Select the Connect Even If the Network Is Not Broadcasting check box. The connection starts.



Manually connect to a wireless network

Enter information for the wireless network you want to add

Network name: MaxPC_NB

Security type: WPA-Personal

Encryption type: TKIP

Security Key/Passphrase: •••••••••••••••••••••••••••••• ☐ Display characters

☑ Start this connection automatically

☑ Connect even if the network is not broadcasting

Warning: If you select this option, your computer's privacy might be at risk.

Figure 12.3

Connecting to a network that does not broadcast its SSID.

Are Non-Broadcast SSIDs More Secure?

Microsoft doesn't think so. In a white paper entitled "Non-broadcast Wireless Networks with Microsoft Windows," available at http://www.microsoft.com/technet/network/evaluate/hiddennet.mspx, Microsoft argues that *not* broadcasting the SSID can actually put your wireless network at greater risk than if you broadcasted it!

Here's why: When you configure your wireless network not to broadcast its SSID, the only way wireless clients can find the wireless router or access point is to periodically send probe requests. Both probe requests from clients and probe responses from the wireless router or access point contain the SSID in clear text easily readable by various tools.

Although Windows Vista uses safer methods to connect to non-broadcast networks than Windows XP, for real security, you should change the default SSID (which identifies the brand or model number of your router or access point), use the appropriate form of WPA or WPA2 encryption with a strong passphrase, and forget about "hiding" your SSID.

Set Network Location

After connecting to a wireless network, you may be prompted to select a network type. Choose from home, work, or public location. Home or work locations are private, whereas a public location is (of course) public.

When you select the private location type, you can see other computers and devices on the network: a feature known as network discovery. For example, you can see other Windows Vista computers, even if they are part of a different workgroup than yours. Also, the Windows Firewall is turned on, and file, media, and printer sharing are disabled.

The public location setting also enables Windows Firewall and disables file, printer, and media sharing. However, it also disables network discovery. If you move from one wireless network to another (for example, from home to office, or from office to a hotel), you will be prompted to select the network location for each new wireless network.

If all you want is a wireless connection to share the Internet, you're all set. However, if you want to share folders or printers with other network clients, see what your network looks like, or manage your connections, it's time to dig deeper into Windows Vista networking with the Network and Sharing Center.

NOTE

You can change the location type and the default settings for public and private locations through the Network and Sharing Center.

Vista's wireless network configuration features work well and provide more security than in Windows XP.

Feature Rating: ***Wireless network configuration***

Using the Network and Sharing Center

The Network and Sharing Center is Windows Vista's one-stop network shop (see Figure 12.4). You can open it from Control Panel's Network and Internet category, or from the Network Explorer.

The main pane of the Network and Sharing Center is used to

- View network status
- Disconnect from the current network, or connect to a network
- Enable or disable network discovery, file and printer sharing, media sharing, Public folder sharing, and password-protected sharing

NOTE

Although the term *network discovery* is new in Windows Vista, the idea isn't new: It's another name for Universal Plug and Play (UPnP), which was introduced in Windows XP. Because network discovery can disclose information about your computer to other computers on a network, network discovery is disabled by default when you select Public as the location type. You don't want complete strangers in a Starbucks getting a side of shared folders with their double lattes!

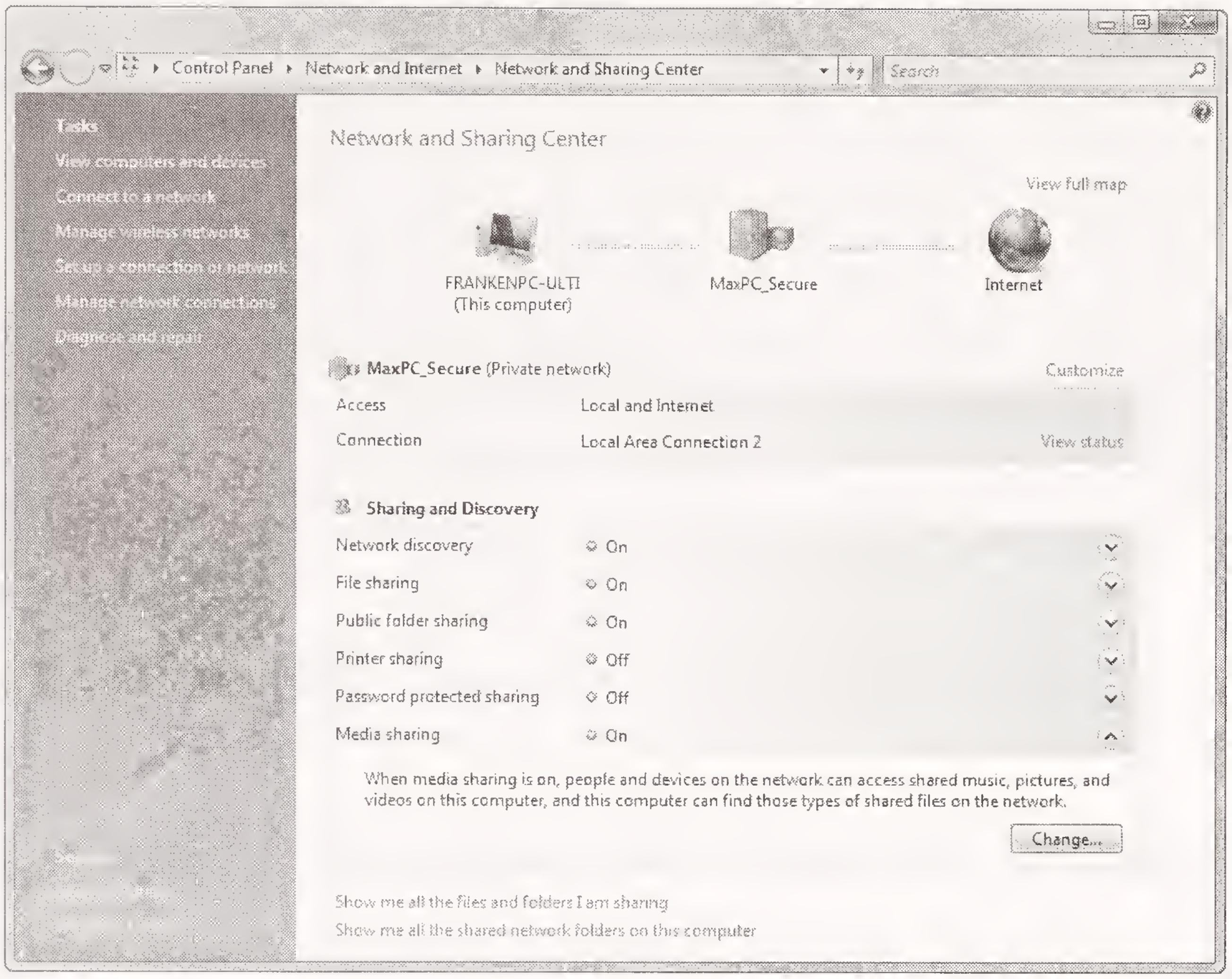
Use the Tasks pane at left to

- View computers and devices with Network Explorer
- Connect to a network
- Manage wireless and other network connections
- Manually set up a connection or network
- Troubleshoot networks

Understanding Network Discovery

Windows Vista is the first version of Windows to include a setting called *network discovery*. When network discovery is enabled, as it is in the Home and Work location types, you can see other computers and devices, and they can see your computer.

Network discovery even works across workgroups, although it takes longer to discover systems in different workgroups. When network discovery is enabled, you can access shared folders in either your own workgroup or other workgroups (on systems running Windows Vista only).


Control Panel ▸ Network and Internet ▸ Network and Sharing Center
Search
Tasks
View computers and devices
Connect to a network
Manage wireless networks
Set up a connection or network
Manage network connections
Diagnose and repair
Network and Sharing Center
View full map
FRANKENPC-ULTI
(This computer)
MaxPC_Secure
Internet
Customize
View status
Change...
Show me all the files and folders I am sharing
Show me all the shared network folders on this computer

MaxPC_Secure (Private network)

Access: Local and Internet

Connection: Local Area Connection 2

Sharing and Discovery

Network discovery: On

File sharing: On

Public folder sharing: On

Printer sharing: Off

Password protected sharing: Off

Media sharing: On

When media sharing is on, people and devices on the network can access shared music, pictures, and videos on this computer, and this computer can find those types of shared files on the network.

Figure 12.4

The Network and Sharing Center.

Network Discovery and Network Security

Network discovery brings an end to the notion that creating a workgroup with a nonstandard name can protect shared resources from discovery (and abuse) by unauthorized users. So, how can you protect shared resources if you're not running a domain-based network?

With Windows Vista, set up user accounts for other users on your network, use the Network and Sharing Center to require passwords for access to shared resources, and specify what level of access different users can have to a particular shared resource. If you use Windows XP Professional or Windows XP Tablet PC Edition 2005, you can disable the default Simple File Sharing setting and configure shares to permit access only by designated users and groups. As with Windows Vista, you must first set up user accounts for other users on your network. Unfortunately, with Windows XP Home Edition and Windows XP Media Center Edition, Simple File Sharing is the only file-sharing option available. You can configure shared folders for read-only or full access, but you cannot control who has access to these folders.

To help prevent unauthorized users from borrowing your wireless network (and possibly gaining access to shares through network discovery!), make sure you use WPA or WPA2 security and a strong passphrase. With either wired or wireless networks, configure your router to provide only the actual number of IP addresses you need for computers and other devices that exist on your network—and know the name of each device. If you suspect that a rogue PC or device has hopped a ride on your network, you can open your router configuration and display a list of current users. Kick any unknown systems off your network.

➪ To learn more about setting up users and groups, see "Managing User Accounts and Family Safety," Chapter 14, p. 329.

Configuring Network Discovery and Sharing

The Sharing and Discovery dialog shown in Figure 12.5 A is used to configure sharing and discovery. If you want to share network folders and media with other computers, you must enable network discovery and file sharing.

When you enable network discovery, you can also change the workgroup name.

When you enable Public folder sharing, you can specify read-only access (open files) or full access (open, change, and create files). Turning off Public folder sharing does not prevent users on the local system from accessing files in the Public folder.

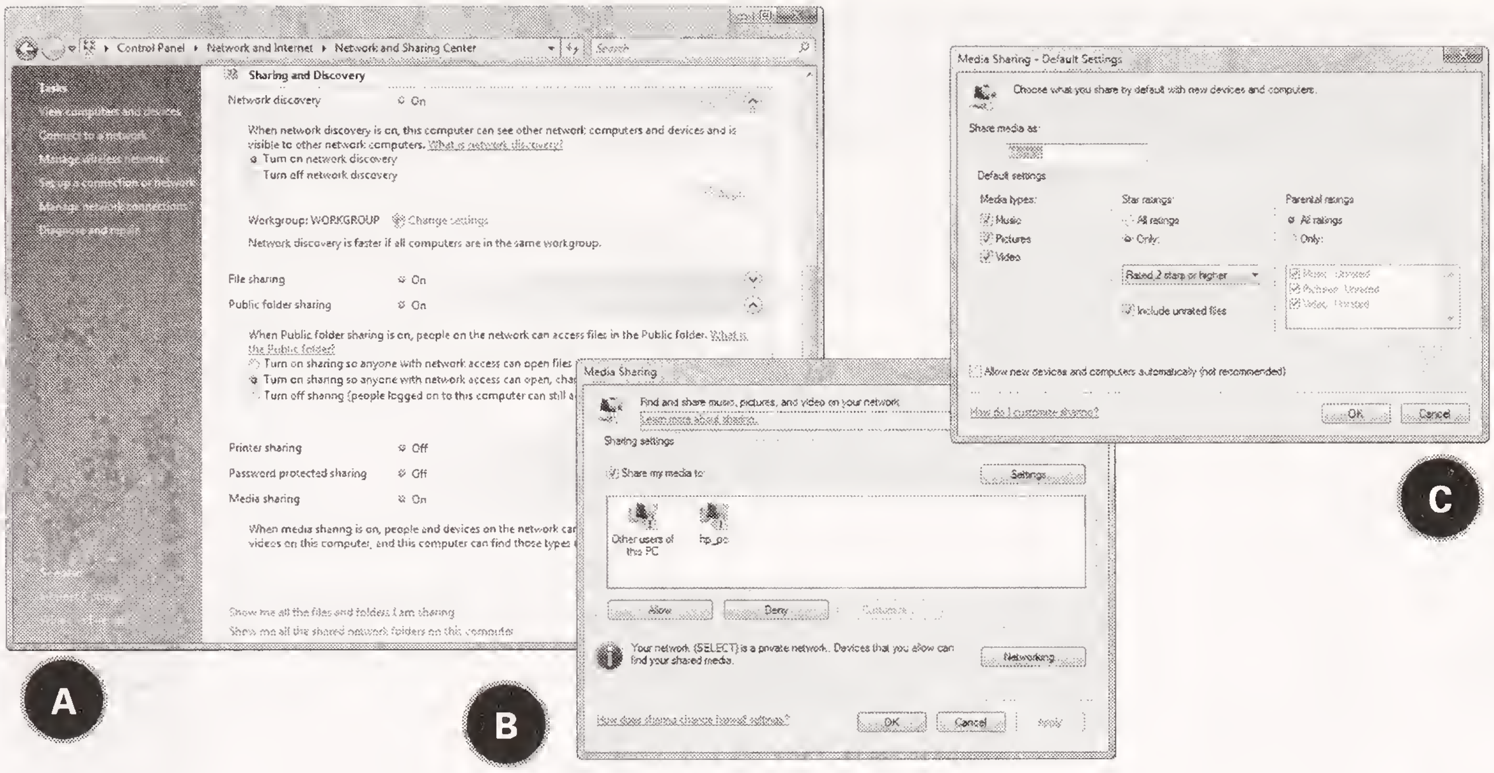
If you enable password-protected sharing, you must create user accounts on your system for each network user you want to access shared resources. When media sharing is enabled, use the Change button to open the Media Sharing dialog shown in Figure 12.5 B. Use this dialog to allow or deny sharing to other systems running Windows Media Player 11. To specify the types of files you share with others, click the Settings button to open the Media Sharing – Default Settings dialog shown in Figure 12.5 C.

Media sharing can also be configured through the Library menu of Windows Media Player.

➪ To learn more about Windows Media Player, see Chapter 8, "Mastering Windows Media Player 11."

NOTE

By default, Windows XP Professional and Windows Vista use WORKGROUP as the default workgroup name. However, if you run the Home Networking Wizard in Windows XP Professional or Home editions, the wizard uses MSHome as the default workgroup name. For faster network discovery, you should configure all systems on your network to use the same workgroup name. Also, if you are networking systems that run Windows Vista and older versions of Windows, all computers must use the same workgroup name to enable sharing.



Control Panel ▸ Network and Internet ▸ Network and Sharing Center
Search
Tasks
View computers and devices
Connect to a network
Manage wireless networks
Set up a connection or network
Manage network connections
Diagnose and repair
Allow
Deny
Customize...
Settings...
Networking...
OK
Cancel
Apply
A
B
C

Sharing and Discovery

Network discovery ● On

When network discovery is on, this computer can see other network computers and devices and is visible to other network computers. What is network discovery?

● Turn on network discovery

○ Turn off network discovery

Workgroup: WORKGROUP Change settings

Network discovery is faster if all computers are in the same workgroup.

File sharing ● On

Public folder sharing ● On

When Public folder sharing is on, people on the network can access files in the Public folder. What is the Public folder?

○ Turn on sharing so anyone with network access can open files

● Turn on sharing so anyone with network access can open, cha

○ Turn off sharing (people logged on to this computer can still a

Printer sharing ● Off

Password protected sharing ● Off

Media sharing ● On

When media sharing is on, people and devices on the network ca
videos on this computer, and this computer can find those types

Show me all the files and folders I am sharing

Show me all the shared network folders on this computer

Media Sharing

Find and share music, pictures, and video on your network. Learn more about sharing.

Sharing settings

☑ Share my media to:

Other users of this PC

hp_pc

Your network (SELECT) is a private network.. Devices that you allow can find your shared media.

How does sharing change firewall settings?

Media Sharing - Default Settings

Choose what you share by default with new devices and computers.

Share media as:

Default settings

Media types: ☑ Music ☑ Pictures ☑ Video

Star ratings: ○ All ratings ● Only: Rated 2 stars or higher

☑ Include unrated files

Parental ratings: ● All ratings ○ Only: ☑ Music: Unrated ☑ Pictures: Unrated ☑ Video: Unrated

☐ Allow new devices and computers automatically (not recommended)

How do I customize sharing?

A The Sharing and Discovery dialog.

B Configuring media sharing.

C Specifying types of media to share.

Figure 12.5

Configuring discovery and sharing.

To learn more about sharing folders and printers, see "Sharing Folders and Printers," this chapter, p. 303.

Network discovery and sharing puts the essential controls in one place, instead of making users search all over the desktop for settings, and does a decent job of explaining the consequences of each option.

👍 *Feature Rating:* ***Network discovery and sharing***

Using the Network Explorer

The Network Explorer is more than a convenient way to start network configuration. After you have configured your network, it displays systems that offer shared resources to your computer. Unlike its predecessor, Windows XP's My Network Places, Network Explorer is device-oriented rather than share-oriented: Double-click a device in the main pane or click the computer node in the Navigation pane to see the shared resources offered by that device (see Figure 12.6).

By focusing on a single task, rather than juggling folder displays, network management, and configuration as in Windows XP's My Network Places, Network Explorer makes exploring your network as easy as exploring your desktop.

NOTE

In Windows Vista, the Public folder replaces the Windows XP Shared Documents folder.

NOTE

Network Explorer, unlike Network Map (discussed in the next section), displays only computers with shared resources accessible to your computer. Computers running older versions of Windows must be a member of the same workgroup as your computer for shared resources to be visible. Computers running Windows Vista must have network discovery enabled for shared resources to be visible.

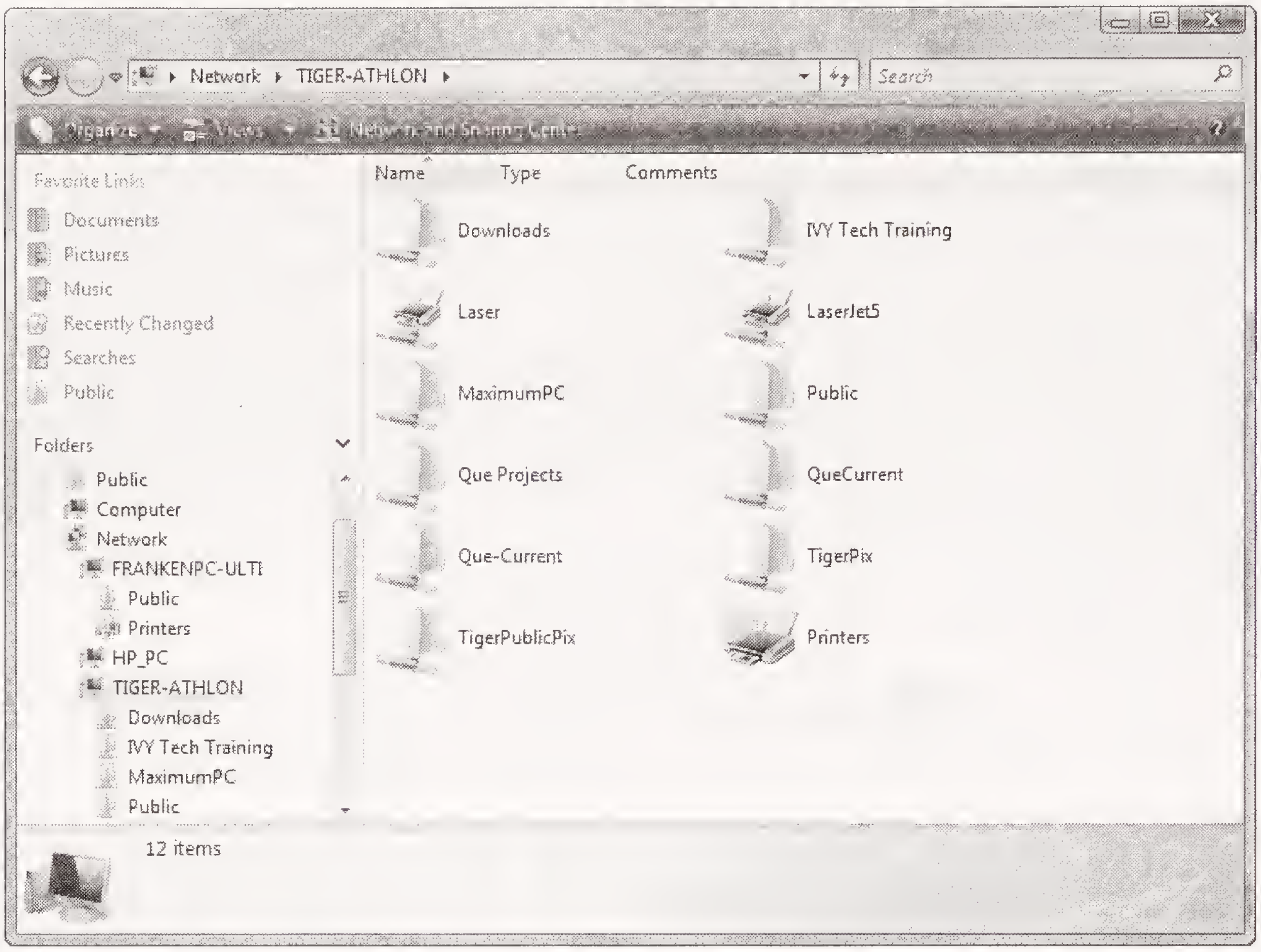

Network ▸ TIGER-ATHLON ▸
Search
Organize
Views
Network and Sharing Center
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Public
Computer
Network
FRANKENPC-ULTI
Public
Printers
HP_PC
TIGER-ATHLON
Downloads
IVY Tech Training
MaximumPC
Public
Name
Type
Comments
Downloads
IVY Tech Training
Laser
LaserJet5
MaximumPC
Public
Que Projects
QueCurrent
Que-Current
TigerPix
TigerPublicPix
Printers
12 items

Figure 12.6

Network Explorer displaying shared folders and printers.

Feature Rating: ***Network Explorer***

Using the Network Map

Although many versions of Windows have displayed shared folders and printers (remember Network Neighborhood, which was apparently just down the street from Mr. Rogers' Neighborhood?), until now, Windows has lacked an easy way to show you what your network looks like. To give your brain a rest (and gain useful information about your network at the same time), click the Network Map button to display a diagram of your network (see Figures 12.7 A, 12.7 B, and 12.7 C for typical examples).

NOTE

Domain-based networks disable network mapping by default. However, it can be reenabled with Group Policy Object Editor. See http://blogs.msdn.com/wndp/archive/2006/11/03/enable_5F00_vista_5F00_network_5F00_map.aspx for details.

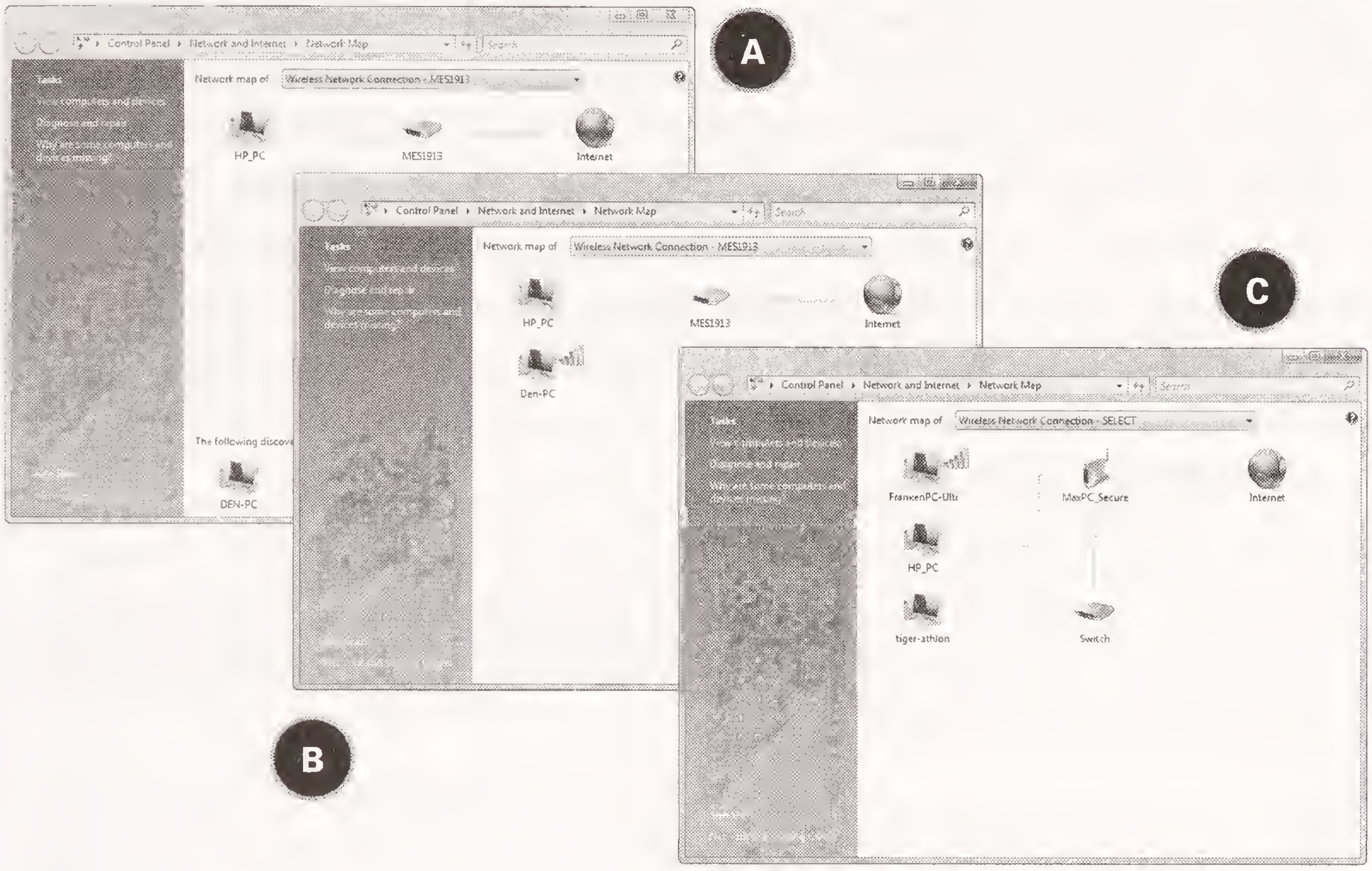
In Figure 12.7 A, DEN-PC is listed but is not on the network map. In Figure 12.7 B, DEN-PC is on the network map—it is shown connected to the wireless router along with HP-PC. When displaying remote wireless clients, the network map shows the signal strength of each remote client.

How does Network Map display Ethernet (wired) clients? Figure 12.7 C shows a network map that includes two wireless and one wired client. Dashed lines indicate the connections between wireless clients and a wireless router or access point; solid lines indicate a wired connection.

Although the switch is represented as a separate device from the wireless router by Network Map, the switch may actually be incorporated into the wireless router.

TIP

Hover your mouse over each computer or device shown in the Network Map to see its name, IP address, and MAC address.


A
Control Panel ▸ Network and Internet ▸ Network Map
Search
Tasks
View computers and devices
Diagnose and repair
Why are some computers and devices missing?
Network map of
Wireless Network Connection - MES1913
HP_PC
MES1913
Internet
The following discove
DEN-PC
B
Control Panel ▸ Network and Internet ▸ Network Map
Network map of
Wireless Network Connection - MES1913
HP_PC
MES1913
Internet
Den-PC
C
Control Panel ▸ Network and Internet ▸ Network Map
Network map of
Wireless Network Connection - SELECT
FrankenPC-Ult
MaxPC_Secure
Internet
HP_PC
tiger-athlon
Switch

A A network map that includes a nonmappable system.

B A network map of the same wireless network after installing the LLTD responder on DEN-PC.

C A network map of a combination Ethernet/wireless network.

Figure 12.7

Using Network Map.

Adding Windows XP-Based Systems to the Network Map

The network maps shown in Figures 12.7 A and 12.7 B show the same two-station wireless network. However, in Figure 12.7 A, DEN-PC (a Windows XP computer) has been discovered but is not on the map. This map is typical of the results you will see if you have a network that includes systems running Windows Vista and older Windows versions. Systems running older Windows versions are not visible unless they are part of the same workgroup as Windows Vista. However, even when they are part of the same workgroup, they cannot be placed on the network map because they lack a protocol that is standard on

TIP

Download the LLTD responder for Windows XP by looking up Knowledge Base article 922120 at http://support.microsoft.com and following the link provided.

Windows Vista: the Link-Layer Topology Discovery Responder (also known as the LLTD responder).

Microsoft provides an LLTD responder that can be installed on Windows XP systems. After the LLTD responder is installed, DEN-PC can be placed on the network map, as shown in Figure 12.7 B.

TIP

If you cannot view shares with Network Map or Network Explorer on a computer that is not running Windows Vista, make sure it is configured to use the same workgroup name as the Windows Vista system. If you have mostly non-Vista systems on your network, change the workgroup name on the Vista system to match other computers. You can do this through the Network and Sharing Center's Network Discovery dialog or through Control Panel's System dialog.

Accessing Network Shares from Network Map

Network Map, unlike Network Explorer, does not distinguish between clients with available shares and those that are physically present on the network but might not have available shares. To determine whether a computer listed in Network Map has available shares, hover your mouse over the computer. If the mouse pointer changes to a pointing finger, the computer has shares you can access: Double-click the computer to open Network Explorer to view and use shares. If the mouse pointer does not change when you hover it over a computer, it does not have available shares.

Network Map is a great tool for analyzing and troubleshooting networks. I wish it included information about workgroups, but even as a "first draft," it's great to have it around. It will save you a lot of walking around!

👍 *Feature Rating:* ***Network Map***

Managing Wireless Network Connections

Connect to your home wireless network, log on to the wireless network at work, go to a meeting and borrow the free Wi-Fi connection at the hotel, grab lunch and your emails at the local cafe, stop by the library and grab some Dewey decimals out of the ether—if you save your connections for reuse, you'll have a pile of wireless connections at the end of the day (or maybe as early as your morning break!).

To sort out which connections live, which die, and which one's top dog in your wireless universe, click the Manage Wireless Networks link from the task pane to open the dialog shown in Figure 12.8 A.

The topmost connection is the one Windows Vista will use first. If you prefer a different connection, select it, and click Move Up. You can also move a connection down. General properties for the selected connection are displayed at the bottom of the dialog. To view detailed properties, click Adapter Properties to open a UAC-protected tabbed dialog (see Figure 12.8 B).

Compared to Windows XP's wireless network adapter properties, Windows Vista wireless adapters are configured with both IP version 4 and IP version 6 and also feature both the LLTD mapper I/O driver (used to map the network) and the LLTD responder (responds to signals from the mapper I/O driver).

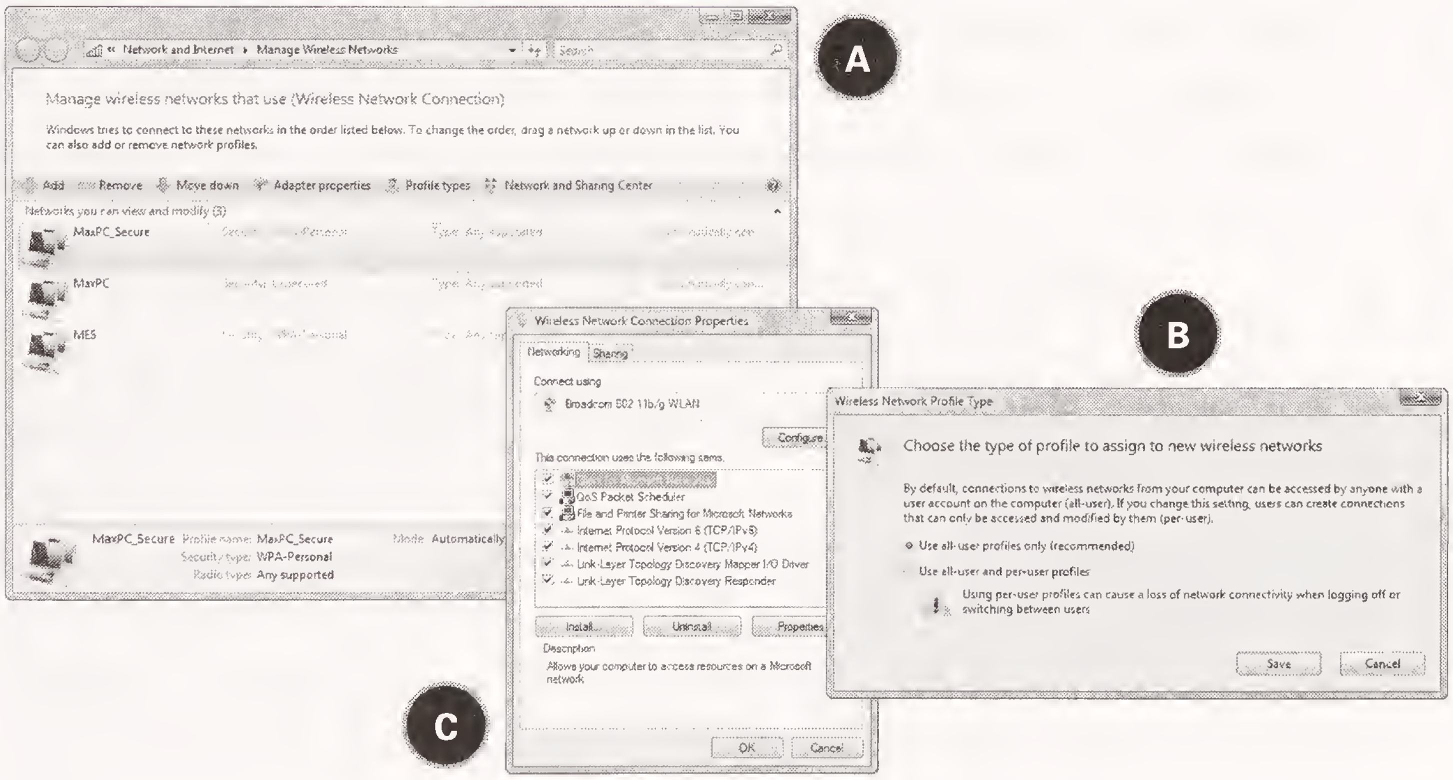
By default, wireless connections are set up for use by all users. To enable the option to set up per-user connections, click Profile Types to open the Wireless Network Profile Type dialog shown in Figure 12.8 C. If you choose the all-user/per-user option, you will be asked on subsequent connections if the connection is for all users or for the current user only.

Wireless connection management is a lot easier in Windows Vista than in Windows XP.

TIP

If you want to keep children off the wireless network, enable this option and select yourself as the only user when you set up your wireless connection at home. Keep in mind, though, if you want other adults to have access to the network, they must configure their own connections separately.

Feature Rating: ***Wireless connection management***


A
B
C
Network and Internet
Manage Wireless Networks
Search
Add
Remove
Move down
Adapter properties
Profile types
Network and Sharing Center
Networks you can view and modify (3)
MaxPC_Secure
MaxPC
MES
Wireless Network Connection Properties
Networking
Sharing
Configure...
Install...
Uninstall
Properties
OK
Cancel
Wireless Network Profile Type
Save
Cancel

Manage wireless networks that use (Wireless Network Connection)

Windows tries to connect to these networks in the order listed below. To change the order, drag a network up or down in the list. You can also add or remove network profiles.

MaxPC_Secure Profile name: MaxPC_Secure
Security type: WPA-Personal
Radio type: Any supported
Mode: Automatically

Connect using
Broadcom 802.11b/g WLAN

This connection uses the following items:

- ☑ QoS Packet Scheduler
- ☑ File and Printer Sharing for Microsoft Networks
- ☑ Internet Protocol Version 6 (TCP/IPv6)
- ☑ Internet Protocol Version 4 (TCP/IPv4)
- ☑ Link-Layer Topology Discovery Mapper I/O Driver
- ☑ Link-Layer Topology Discovery Responder

Description
Allows your computer to access resources on a Microsoft network.

Choose the type of profile to assign to new wireless networks

By default, connections to wireless networks from your computer can be accessed by anyone with a user account on the computer (all-user). If you change this setting, users can create connections that can only be accessed and modified by them (per-user).

● Use all-user profiles only (recommended)
○ Use all-user and per-user profiles

Using per-user profiles can cause a loss of network connectivity when logging off or switching between users

A The main management dialog.

B Viewing properties of a typical wireless connection.

C The Wireless Network Profile Type dialog.

Figure 12.8

Managing wireless connections.

Troubleshooting Your Network Connection

Although the Network and Sharing Center includes a Diagnose and Repair task, it's not the only tool you have to figure out what ails your network connection. The graphic at the top of the Network and Sharing Center (refer to Figure 12.4) gives you a clear idea of what's going on: If there's an X marking across either the connection to the Internet or to your router, you've lost your connection. Check the following:

- For USB-based adapters, check the USB cable. Disconnect the adapter from the port or cable, wait a few moments, and plug it in again.
- For removable adapters (such as CardBus or ExpressCard adapters on laptops), eject the wireless adapter and plug it in again.
- For internal adapters (such as integrated or PCI card adapters), use the Wireless Network Connection Status dialog shown in Figure 12.9 A to disable and enable the adapter.
- If the connection break is between the router and the Internet, check the WAN connection between the router and your broadband device (such as a cable or DSL modem). If the cable connection looks okay, disconnect power to the router, wait a few moments, and power it up again.
- If the broadband device's signal lights indicate a problem, disconnect power to the device, wait a few moments, and power it up again. You may need to wait several minutes for the device to resynchronize.

If your connection is working but seems to be slow, it's time to check network status. If you're running a wireless connection, count the number of bars (just like in the TV commercial, more is better). For more information about either a wired or wireless connect, click View Status.

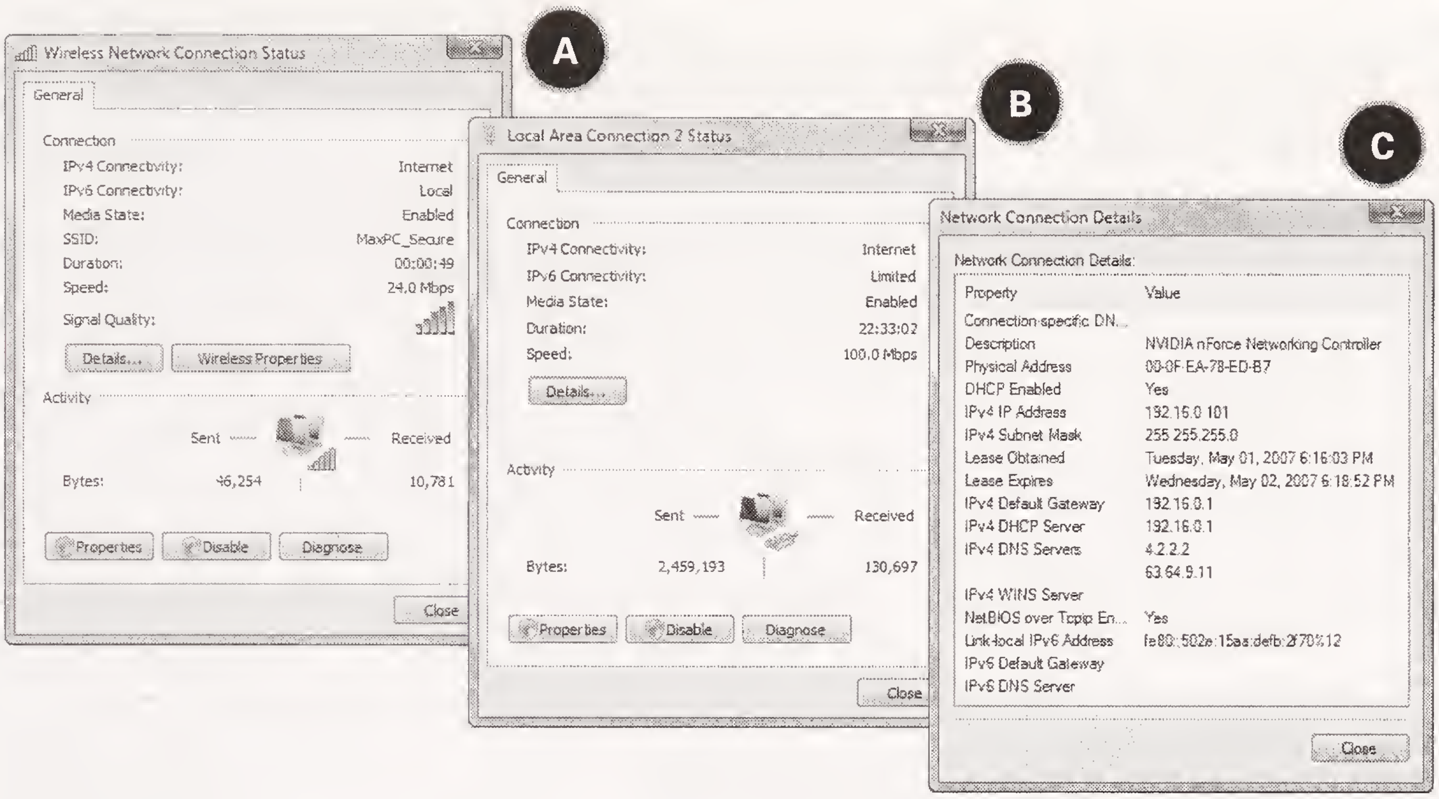
Figure 12.9 A shows a typical status dialog for a healthy wireless connection, and Figure 12.9 B shows a typical status dialog for a healthy Ethernet connection. Click the Details button for more information (see Figure 12.9 C).

NOTE

If you saved the connection for reuse, your system should reconnect automatically when you reconnect or enable the adapter *if* your adapter and the router are working.

TIP

The Wireless Network Connection Status dialog displays the speed of your connection in real-time. If your wireless speeds vary a lot, try adjusting the location of your antenna or your adapter. To find other nearby wireless networks that may be interfering with yours, use the free NetStumbler tool available from http://www.netstumbler.com. If other networks use the same channel as yours, change your router to a different channel (1, 6, or 11) to avoid interference and help increase connection speed. Many routers can also be equipped with high-gain or directional antennas to boost signal strength.



Wireless Network Connection Status

Connection
IPv4 Connectivity: Internet
IPv6 Connectivity: Local
Media State: Enabled
SSID: MaxPC_Secure
Duration: 00:00:49
Speed: 24.0 Mbps
Signal Quality:

Activity
Sent — Received
Bytes: 46,254 | 10,781

Local Area Connection 2 Status

Connection
IPv4 Connectivity: Internet
IPv6 Connectivity: Limited
Media State: Enabled
Duration: 22:33:02
Speed: 100.0 Mbps

Activity
Sent — Received
Bytes: 2,459,193 | 130,697

Network Connection Details

Network Connection Details:

Property	Value
Connection-specific DN...	
Description	NVIDIA nForce Networking Controller
Physical Address	00-0F-EA-78-ED-B7
DHCP Enabled	Yes
IPv4 IP Address	192.16.0.101
IPv4 Subnet Mask	255.255.255.0
Lease Obtained	Tuesday, May 01, 2007 6:16:03 PM
Lease Expires	Wednesday, May 02, 2007 6:18:52 PM
IPv4 Default Gateway	192.16.0.1
IPv4 DHCP Server	192.16.0.1
IPv4 DNS Servers	4.2.2.2 63.64.9.11
IPv4 WINS Server	
NetBIOS over Tcpip En...	Yes
Link-local IPv6 Address	fe80::502e:15aa:defb:2f70%12
IPv6 Default Gateway	
IPv6 DNS Server	

A Typical wireless connection.

B Typical Ethernet connection.

C Details for Ethernet connection.

Figure 12.9

Viewing connection status.

If you can't find an obvious problem with your connection, but it's either completely out to lunch or acting as if it's transmitting molasses in January, click the Diagnose button on the status dialog or click Diagnose and Repair from the Task menu.

If you prefer to use advanced command-line stalwarts such as Ping, Tracert, and Netsh to troubleshoot your network, they're still around. Open a command prompt window to use them.

TIP

If you're having problems with your connection, you're better off using the Diagnose button (refer to Figures 12.9 A and 12.9 B). After it runs, you have the option of resetting your adapter, even if Windows Network Diagnostics doesn't find a problem. If resetting your adapter seems to settle things temporarily, but problems keep coming back, update your adapter's drivers.

Sharing Folders and Printers

After you enable folder sharing in the Network and Sharing Center, you can decide what folders to share (Public folder sharing is also enabled in the Network and Sharing Center).

To share a folder, navigate to it with the appropriate explorer, right-click the folder and select Share. From the File Sharing dialog shown in Figure 12.10 A, select the users you want to access the folder, select the level of access to provide for each user, and click the UAC-protected Share button to complete the process. A shared folder is indicated by a special icon (see Figure 12.10 B).

You can grant three levels of access:

- Reader—User has read-only access to the files in the folder.
- Contributor—User can view all files and add, change, and delete her own files.

WARNING

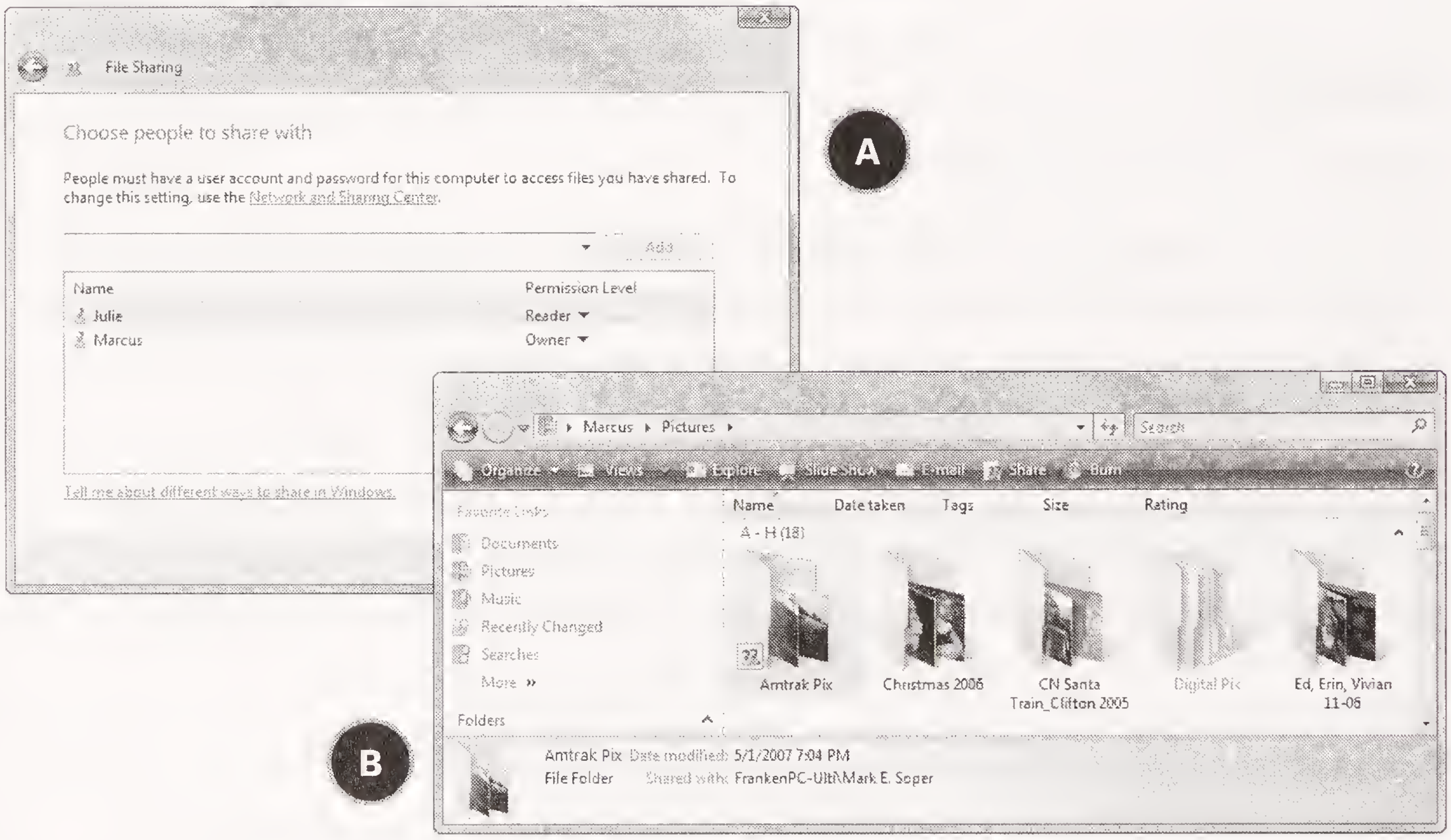
If password-protected sharing is disabled in the Network and Sharing Center, anyone with network access (not just listed users) can access a shared folder when you select Everyone.

- Co-owner—The specified user can view, add, change, and delete all files.

To stop sharing the folder, right-click the folder and select Stop Sharing, or select Change Sharing Permissions to edit share settings.

A Assigning access levels.

B A shared folder (left) is identified by a users icon.


File Sharing
A
B
Marcus ▸ Pictures ▸
Search
Organize
Views
Explore
Slide Show
E-mail
Share
Burn
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
More »
Folders
Name
Date taken
Tags
Size
Rating
A - H (18)
Amtrak Pix
Christmas 2006
CN Santa Train_Clifton 2005
Digital Pix
Ed, Erin, Vivian 11-06

Choose people to share with

People must have a user account and password for this computer to access files you have shared. To change this setting, use the Network and Sharing Center.

Add

Name	Permission Level
Julie	Reader
Marcus	Owner

Tell me about different ways to share in Windows.

Amtrak Pix Date modified: 5/1/2007 7:04 PM
File Folder Shared with: FrankenPC-Ulti\Mark E. Soper

Figure 12.10

Sharing a folder.

Troubleshooting Access to Shared Folders from Windows XP

As long as you don't require password protection for shared folders in the Network and Sharing Center and select Everyone as the user for a shared resource, Windows XP systems can access Windows Vista shares without any problems. The trouble is, letting everyone access a shared resource isn't a secure way to build a home (or small office) network. After all, if you don't secure a wireless network, anyone could enjoy your shared media collection—or worse.

So, setting up specific users with access to a shared folder is the best idea. However, Windows XP users may find the door slammed on them with an "Access Denied" error when they attempt to access a share on a Windows Vista system, even though that same Windows Vista system might have no problems using a Windows XP share. Doesn't seem fair, does it?

The problem is connected to Internet Protocol v6 (IPv6, for short): Vista has it; Windows XP doesn't. Vista has no problems "talking" to a Windows XP share on a system that has only the standard IPv4 stack, but when a computer tries to connect to a password-protected Vista share, Vista expects IPv6 to do the heavy lifting. If IPv6 isn't on the remote PC, no sharing for you!

What's the solution? Take your pick:

- Disable IPv6 on the Vista box—From the status dialogs shown in Figures 12.9 A and 12.9 B, click the Properties button to display the properties for the connection you're using. Uncheck Internet Protocol version 6, and click OK.
- Install IPv6 on the Windows XP box—This is easier than it sounds if the system is running Windows XP Service Pack 2 (which everybody should have these days): Microsoft IPv6 was originally introduced as part of the Advanced Networking Pack for Windows XP SP1, and it's an integral part of SP2. To get to the network connections in XP, open My Network Places, and click View Network Connections from the Network Tasks menu. Right-click the connection you use and select Properties. If Microsoft TCP/IP version 6 is not listed (and chances are, it isn't), click Install, Protocol, Add, and select Microsoft TCP/IP version 6 from the list of available protocols. Click OK. If it is already installed but the box is unchecked, click it to enable it.

I recommend you use Microsoft IPv6 on your Windows XP box as long as it doesn't cause problems with other systems on your network. Eventually, we'll all be using IPv6 (which provides many more IP addresses globally than version 4 and adds other features). However, if using IPv6 causes problems with older Windows versions or with non-Windows devices on your network, you can disable IPv6 on your XP and Vista boxes and use the tried-and-true IPv4 stack included in XP, Vista, and other operating systems.

Networking Best and Worst Practices

Use this section to keep your network from turning into disconnected islands of information.

Best Networking Practices

- Set up your wireless network with WPA or WPA2 encryption (if all your network devices support it). You can use the Set Up a Connection or Network task in the Network and Sharing Center to start the process; select Set Up a Wireless Router or Access Point to set up the network with a USB flash drive or to create a passphrase for manual setup.
- If you have problems with wired or wireless network stability, update the drivers used by your network adapter and update the firmware used by your router.
- Use the Public location setting for wireless connections provided by coffee shops, libraries, and other locations to protect your system from intruders.
- Use Network Explorer to see shares available to use; use Network Map to see the physical connections used on the network.
- Update Windows XP systems to Windows Media Player 11 if you want to use media sharing to make their digital media files available to Windows Vista for playback.
- Use password-protected sharing to keep unwanted users away from network shares.

Networking Practices to Avoid

- Don't share entire folders if you need to share only a few files in the folder; instead, copy the files to the Public folder and enable Public folder sharing in the Network and Sharing Center.
- Don't assume that you must buy a new network adapter if Windows Vista doesn't have a driver for your adapter. Download a driver (use an XP driver if a Vista driver's not available) from the vendor's website.
- Don't use file sharing to share media folders for playback only; use media sharing instead.

- Don't save wireless connections you probably won't use again, such as a connection at a conference room or hotel.
- Don't try to type in a long WPA passphrase when you set up a connection. Instead, copy the network setup information to a file on a removable-media drive and use copy/paste to insert the passphrase.

Part IV

Keeping Windows Vista Safe with Backup and Troubleshooting Tools

13 Burn, Baby, Burn! Backup Inferno 311

14 Protecting Windows Vista 327

15 Troubleshooting and Maintaining Windows Vista 353

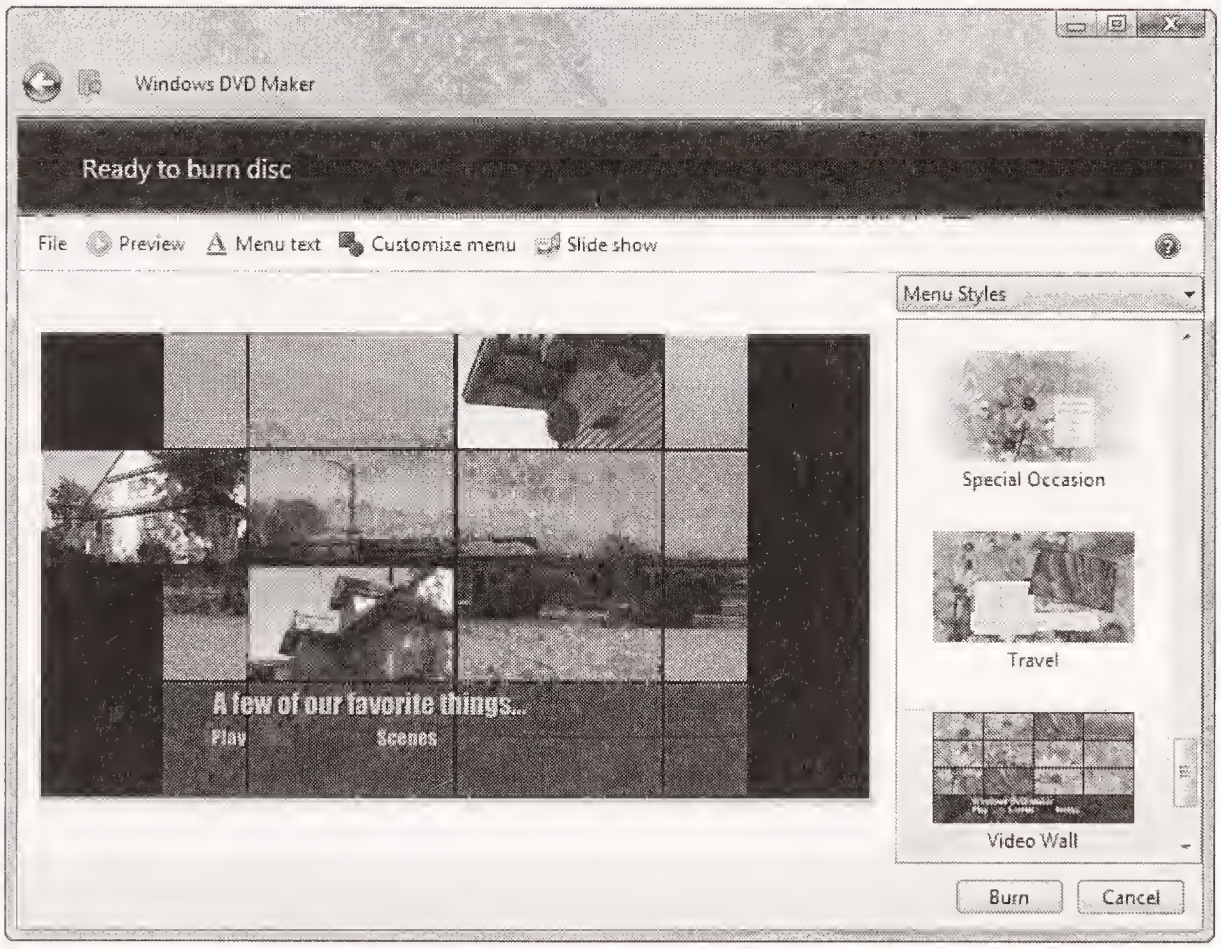
Chapter Thirteen

Burn, Baby, Burn! Backup Inferno

IN THIS CHAPTER

- Integrated CD and DVD Support
- Burning a Data CD or DVD
- Burning a Video DVD
- Windows Backup and Restore Center
- Creating an Image Backup
- Creating a File and Folder Backup
- CD and DVD Recording Tips and Tricks

Integrated CD and DVD Support



Windows DVD Maker

Ready to burn disc

File
Preview
Menu text
Customize menu
Slide show
Menu Styles
A few of our favorite things...
Play
Scenes
Special Occasion
Travel
Video Wall
Burn
Cancel

One of the most welcome changes in Windows Vista is its full-blown support for rewritable DVD and CD drives. You can create a data CD or DVD from any folder in Windows Vista, and this feature is especially useful for creating collections of digital photos and music.

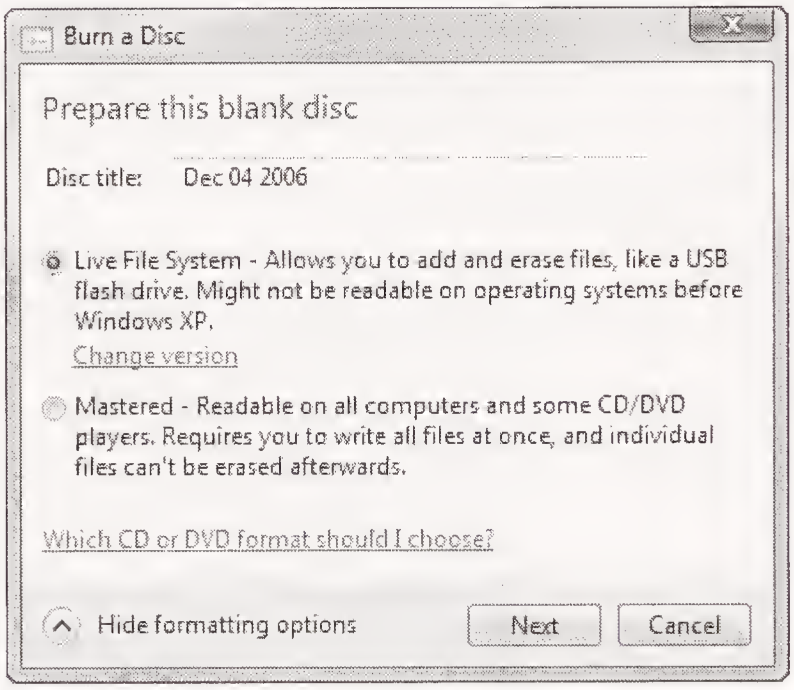
Vista also makes it easy to create a video DVD of your favorite photos and movies, and supports CD and DVD drives for backup.

Burning a Data CD or DVD

Creating a data CD or DVD in Windows Vista is simple. To get started, open the explorer view containing the files you want to burn, select a file or folder (or groups of same), and click the Burn icon.

Insert a writable disc into your CD or DVD drive (the tray pops open automatically). You can use any CD or DVD format supported by your drive, a big improvement over Windows XP, which never did support recordable or rewritable DVD media.

When you insert the disc, a pop-up window appears prompting you for a disc title (the current date is used as the default). Click Show Formatting Options to display the dialog as shown in Figure 13.1.



Burn a Disc

Prepare this blank disc

Disc title: Dec 04 2006

● Live File System - Allows you to add and erase files, like a USB flash drive. Might not be readable on operating systems before Windows XP.

Change version

○ Mastered - Readable on all computers and some CD/DVD players. Requires you to write all files at once, and individual files can't be erased afterwards.

Which CD or DVD format should I choose?

Figure 13.1

Choosing a format for a blank disc.

As you can see you have two options from which to choose: Live File System and Mastered. The next two sections detail each of these options.

Creating a Live File System Disc

By default, Windows Vista uses the Live File System format for both rewritable (DVD+RW, DVD-RW, and CD-RW) and recordable (DVD+R, DVD-R, DL, and CD-R) media. The Live File System is Microsoft's name for the UDF (universal disk format) file system supported by Windows XP's CD writing feature and by various third-party rewritable CD/DVD programs, including Roxio's Drag and Drop, Sonic DLA, Nero InCD, and others. Live File System (UDF) enables drag-and-drop file copying and individual file erasure from rewritable media.

When UDF for Recordable Media Makes Sense

UDF, which is the basis for Vista's Live File System, was originally designed for rewritable media. Why use Live File System for recordable media that can't be erased?

There are actually a couple of reasons that Windows Vista uses Live File System as the default for recordable media as well:

- You can keep adding files to the media until it's full by using drag and drop or Send to. This is perfect for situations in which you are working on a compilation of photos, music, or other media and want to store working files off your system until you're finished with it.
- UDF supports individual files that are greater than 2GB (the size limit of the ISO 9660 file system used for mastering). This makes UDF a better choice for storing large files, such as video files, on DVD media than then ISO 9660 file system used for mastering.

Why offer mastering as an option, then? A mastered disc has all the files written to it at once, making it more compatible with older Windows versions or with other operating systems such as MacOS or Linux. Also, mastering works better than Live File System with CD-R media; you may see errors when you try to use Live File System with CD-R media. If you are copying a lot of files to the disc and you aren't sure of the capabilities of the target system, use mastering with recordable media.

After you select Live File System and click Next, the disc is formatted and the files are copied to the media. A progress bar appears during the format process and is replaced by a different progress bar during the burning process.

To remove the disc from your system, press the eject button on the drive or right-click the drive icon in the explorer window and select Eject. After the current session is closed, the disc is ejected.

Creating a Mastered Disc

The process of creating a mastered disc in Windows Vista is similar to the process used in Windows XP for burning files to a CD. However, Windows Vista also supports DVD media.

Insert media, and when the formatting options dialog shown in Figure 13.1 appears, click Show Formatting Options, select Mastered, and click Next to continue.

The Curse of the Many Flavors of UDF

Universal Disk Format (UDF), despite its name, isn't as "universal" as you might think. As with most technology formats, UDF has changed over time. The default UDF version that Live File System uses is 2.01, which is compatible with Windows XP in read-only mode (you can erase the media with Windows XP but not individual files). However, by clicking the Change Version link shown in Figure 13.1, you can also select versions 1.5, 2.00, and 2.5 (2.5 is intended for use with other Windows Vista systems only). To enable a Live File System disc to be readable by systems that use third-party UDF readers, you may need to specify a different UDF version.

As long as you are using Live File System discs on a Windows Vista or a Windows XP system that does *not* include a third-party UDF program, stick with the default settings. However, if you plan to interchange data with a system that uses Nero, Sonic, Roxio, or another third-party program for UDF support, you should create a test disc using the UDF version supported by the other program on your Windows Vista system and see whether the data can be read on the target system. If you are unable to determine the UDF version used by the third-party program, you may need to create multiple discs using different UDF versions.

Don't be surprised if you cannot erase individual files from the media. Interoperability problems between UDF implementations have been around as long as rewritable CD media.

If you don't need to reuse the media and no individual file is larg\er than 2GB, consider using the mastering option instead of Live File System.

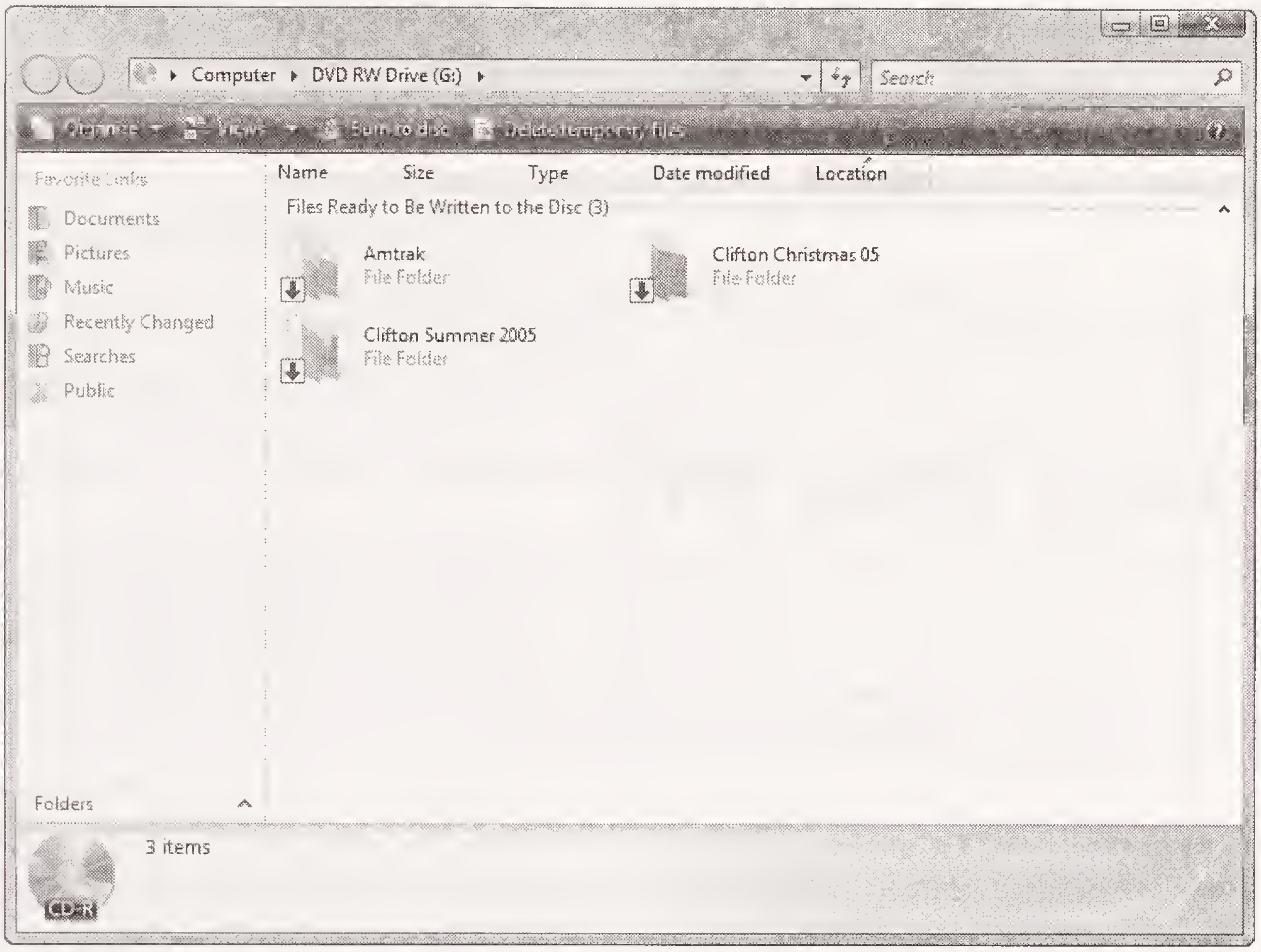
TIP

If you're burning media for use on an older CD or DVD drive or for a non-PC device, such as a boombox or car stereo, you may want to use a slower burn speed to ensure that it can read the media successfully. If the target device can't read media burned at the fastest speed, try the slowest speed, or change to recordable, rather than rewritable, media.

A dialog similar to the one shown in Figure 13.2 appears, displaying temporary files or folders waiting to be burned to disc. Click Burn to Disc to complete the process.

After validating the disc, the Burn to Disc dialog shown in Figure 13.3 appears. Enter the disc title and select a burn speed. The fastest supported burn speed for the current media is selected by default.

If you want to burn more than one copy of your files, clear the Close the Wizard After the Files Have Been Written check box. Click Next to continue.


Computer ▸ DVD RW Drive (G:) ▸
Search
Organize
Views
Burn to disc
Delete temporary files
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Folders
Name
Size
Type
Date modified
Location
CD-R

Files Ready to Be Written to the Disc (3)

Amtrak
File Folder

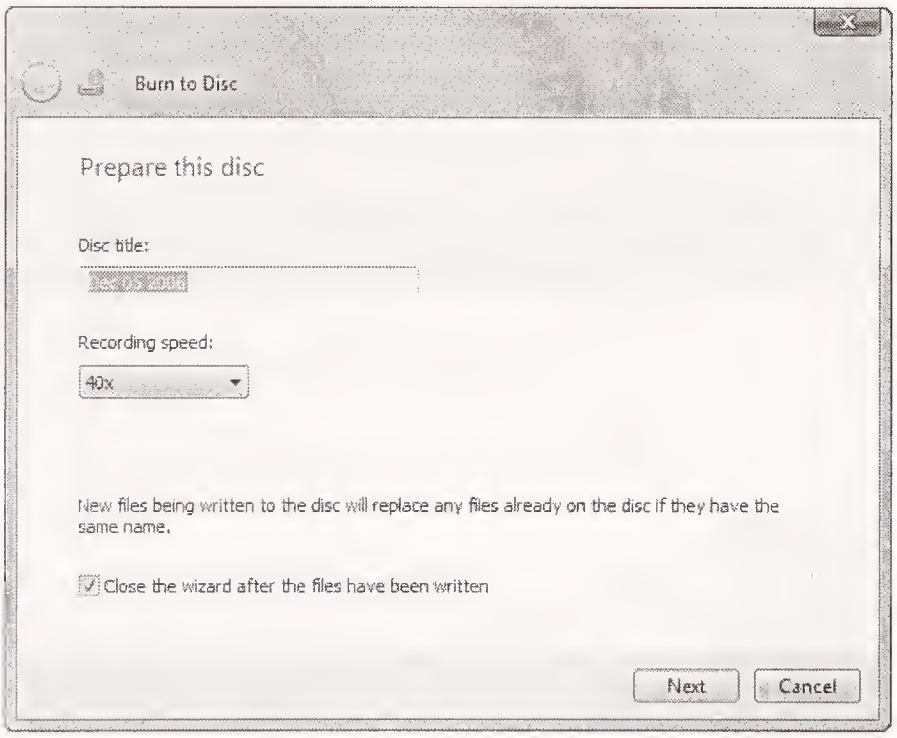
Clifton Christmas 05
File Folder

Clifton Summer 2005
File Folder

3 items

Figure 13.2

Preparing to burn temporary files to the disc in mastering mode.


Burn to Disc
Next
Cancel

Prepare this disc

Disc title:

Recording speed: 40x

New files being written to the disc will replace any files already on the disc if they have the same name.

☑ Close the wizard after the files have been written

Figure 13.3

Name it, select a burn speed, and get your burn on.

After data is added to the disc image, the disc is burned. At the end of the process, the drive ejects the media. To make sure it's readable, pop the disc back in and watch for the AutoPlay menu.

Although the CD and DVD Burning Wizard is no replacement for a good third-party program (Nero and Roxio fans, this is your cue to fight for your favorite program), it does provide better drive and media support than the feeble CD-only burning feature in Windows XP.

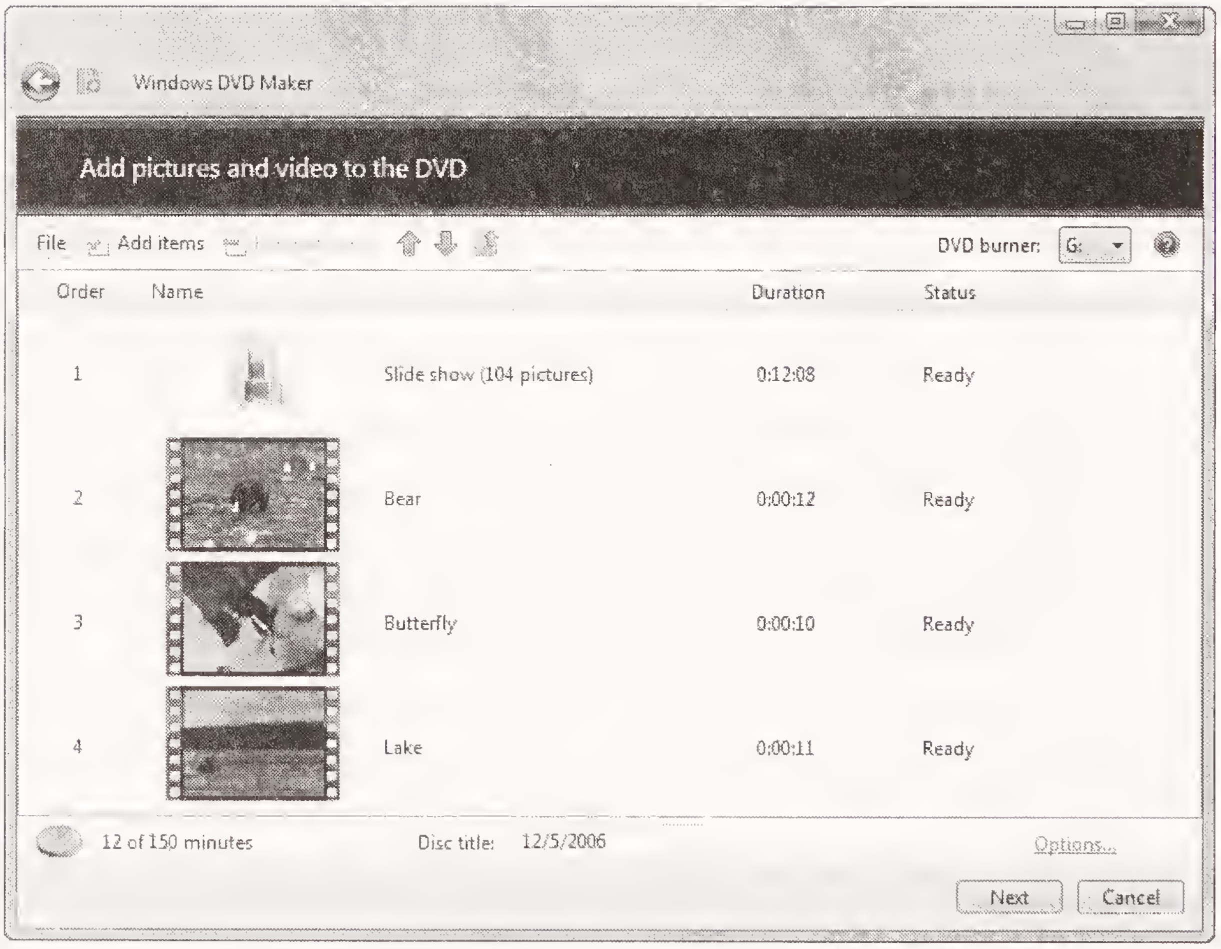
Feature Rating: ***CD and DVD Burning Wizard***

Burning a Video DVD

With this being the decade of the bigger-than-ever TV, it's only natural that many of us are looking for an easy way to put our favorite photos or videos on the biggest screen in the house. Windows Vista makes it easy with its new Windows DVD Maker feature.

You can start Windows DVD Maker from the Start menu, or from the new Windows Photo Gallery. From the Windows DVD Maker dialog, click Add items to open a browse window. Select the videos or photos you want to add to the DVD and click Add. Repeat the process until you have added all of the files you want to place on the DVD.

You can mix and match videos and photos on a single DVD, as Figure 13.4 illustrates.



DVD burner: G:

Order	Name	Duration	Status
1	Slide show (104 pictures)	0:12:08	Ready
2	Bear	0:00:12	Ready
3	Butterfly	0:00:10	Ready
4	Lake	0:00:11	Ready

12 of 150 minutes

Disc title: 12/5/2006

Figure 13.4

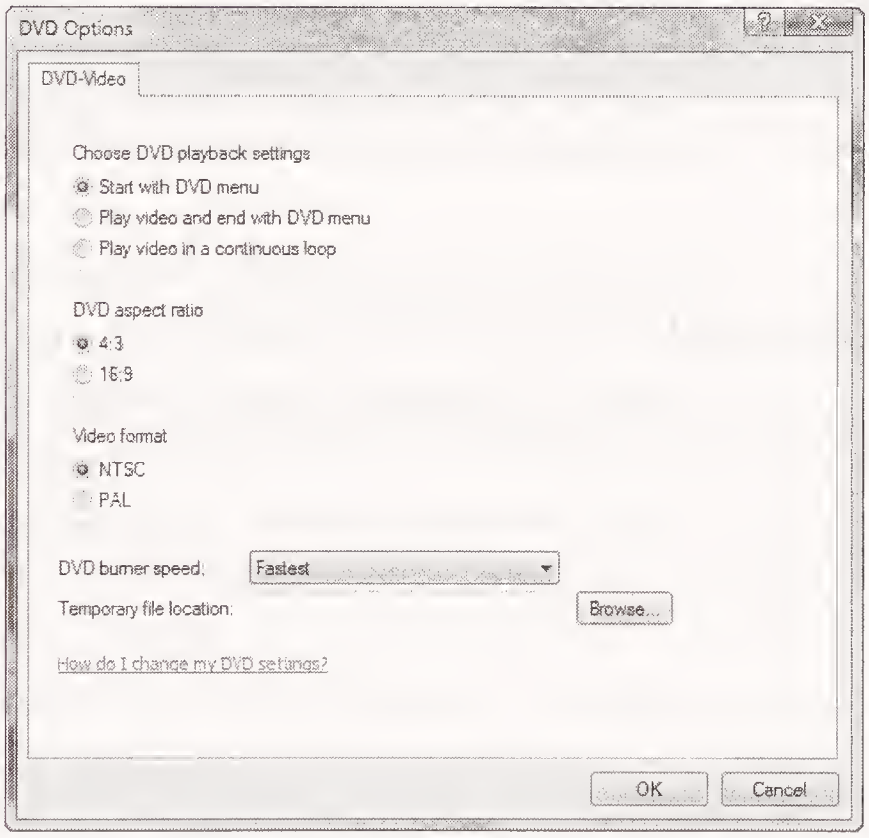
Building a mixed photo/video Video DVD.

Select an item and use the menu buttons to move it up or down the playback order, or to remove it. To preview it, right-click it and select Play (for videos) or Preview (for photos).

Setting Up DVD Options

Before you start the burn process, take a moment to click the Options link. The Options menu (see Figure 13.5) helps you customize your DVD:

- If you are burning wide-screen video, be sure to select the 16:9 format.
- Sending a DVD to your friends in the UK? Select PAL instead of the standard NTSC video format.
- Creating a DVD for a wedding, funeral or other special occasion and don't want to baby-sit the player? Select the continuous loop playback option.
- Having problems with a finicky set-top DVD player? Slow down the burn speed to Medium or Slowest.



Choose DVD playback settings

● Start with DVD menu

○ Play video and end with DVD menu

○ Play video in a continuous loop

DVD aspect ratio

● 4:3

○ 16:9

Video format

● NTSC

○ PAL

DVD burner speed: Fastest

Temporary file location:

How do I change my DVD settings?

Figure 13.5

Use the DVD options menu to select aspect ratio, video format, menu settings, and burner speed.

Click Next to continue.

Customizing and Burning Your Video DVD

The Ready to Burn Disc dialog also provides customization opportunities (see Figure 13.6).

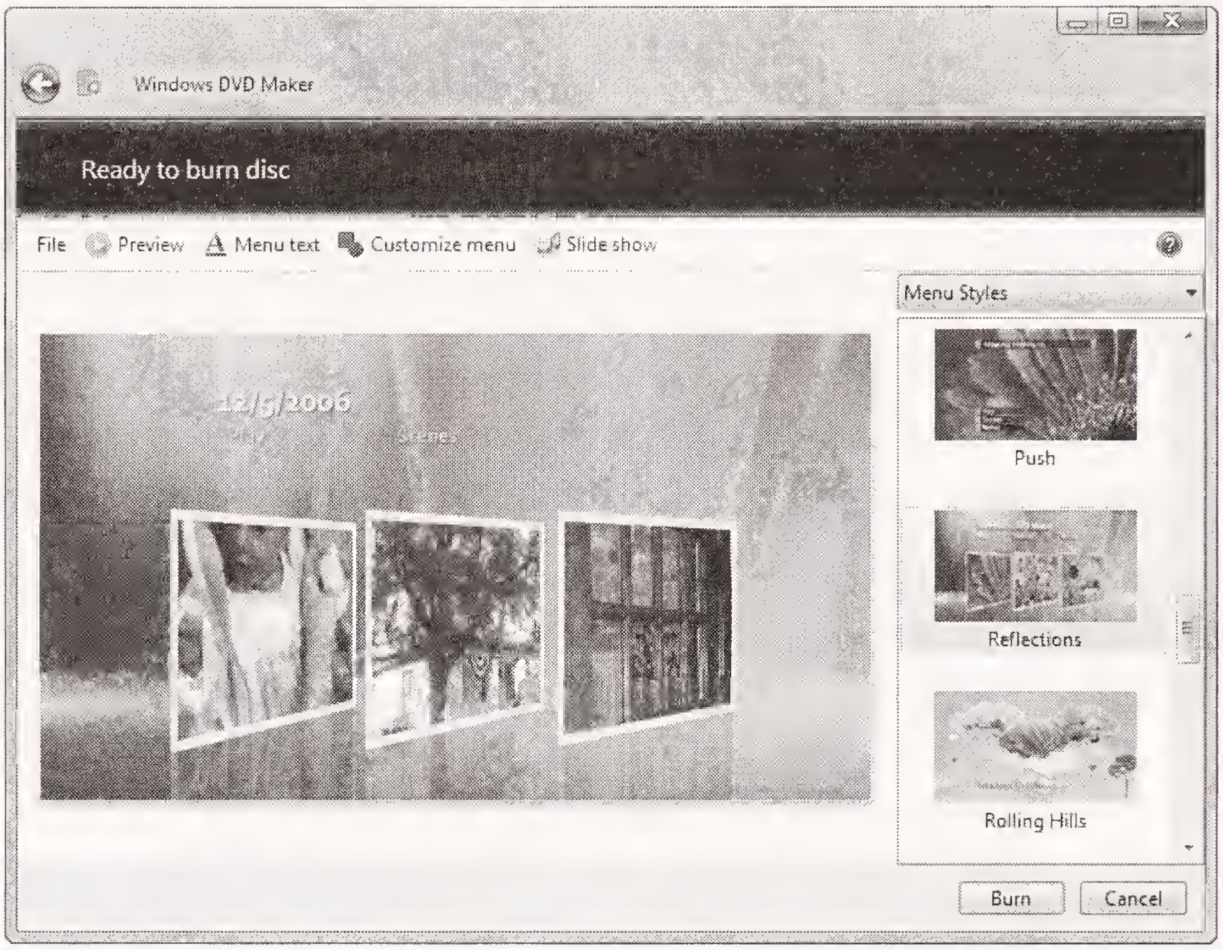

Windows DVD Maker
Ready to burn disc
File
Preview
Menu text
Customize menu
Slide show
Menu Styles
12/5/2006
Play
Scenes
Push
Reflections
Rolling Hills
Burn
Cancel

Figure 13.6

Preparing to burn the DVD using a customized menu.

You can select from about 20 different menu styles, and your choices don't stop there:

- Click Customize Menu to add audio or video to the menu, or to change button styles or fonts.
- Click Menu Text to change the text used in the menu.
- Click Slide Show to add music, change transition length, or change transition type.
- Click Preview to preview the DVD.

Click Burn when you're satisfied with your creation. Insert media when prompted, and a progress dialog appears as the DVD is encoded and burned to the media. At the end of the process, your DVD is ejected, and a new dialog box appears. If one is all you need, click Close. If you've only just begun, click Make Another Copy. Insert another DVD and continue. Each additional DVD burns quickly because the DVD is already encoded.

After you finish burning your DVD, your project stays open. When you close it, you are prompted to save it. Click Yes, and you're prompted to provide a filename. By default, the project is saved to your Videos folder.

➪ To learn more about Windows Movie Maker and Windows Photo Gallery, see Chapter 9, "Windows Media Center the Vista Way."

If you've been looking for an easy way to convert your photos into a DVD video-compatible slideshow, Windows DVD Maker's just the ticket. It offers a decent amount of customizations, and it doesn't require a lot of time. Third-party packages provide more options (including synchronizing music to particular slides), but if you need a DVD in a hurry, Windows DVD Maker's a great choice.

Feature Rating: ***Windows DVD Maker***

Windows Backup and Restore Center

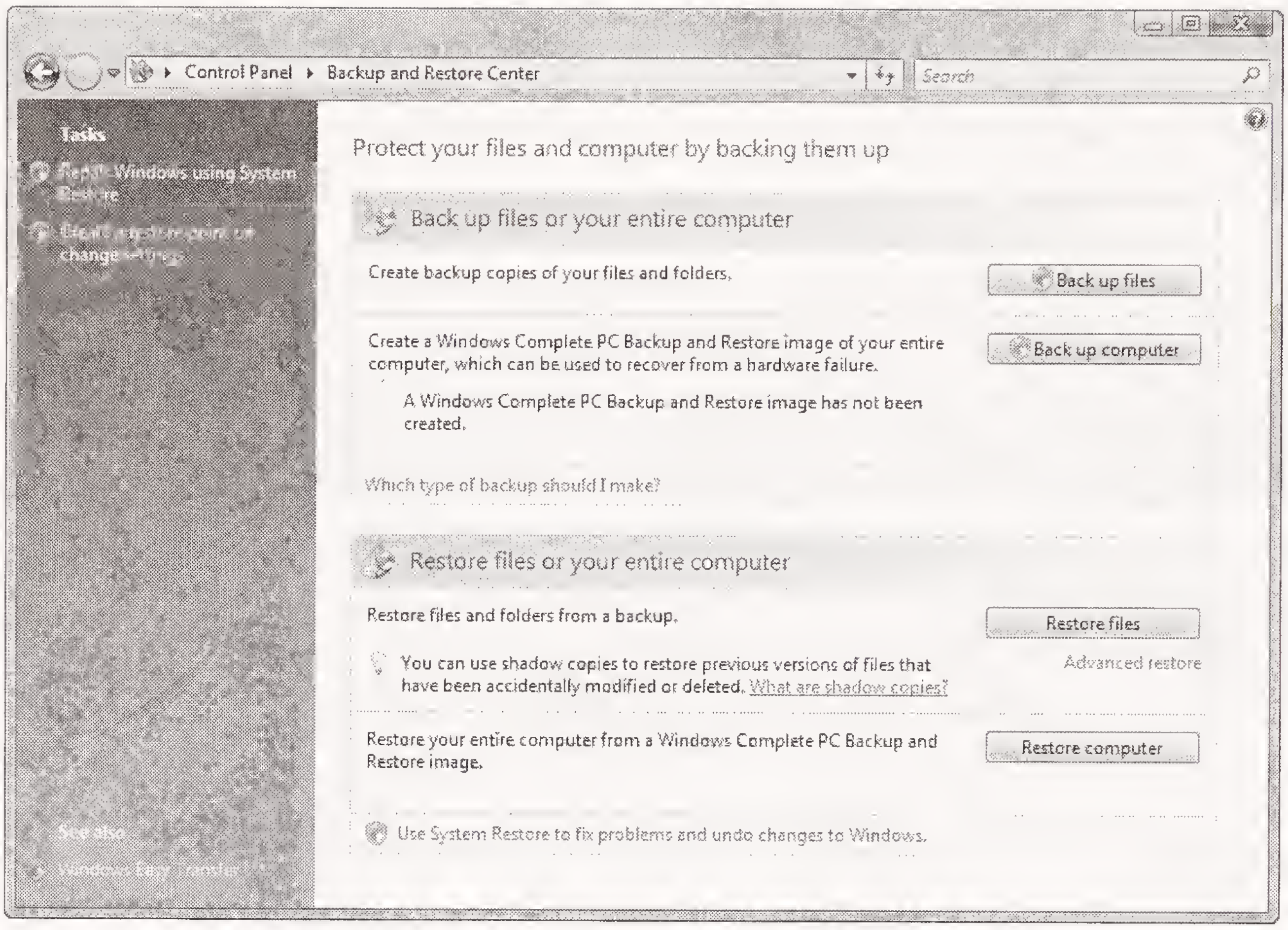
The Windows Vista Backup and Restore Center (see Figure 13.7) is a completely new application, bringing comprehensive data backup features to all Windows Vista users, and adding a powerful disc-imaging disaster recovery backup feature to users of Windows Vista Business, Enterprise, and Ultimate editions. The file backup features in Windows Vista work with rewritable or recordable CD or DVD media or with removable-media, hard disks, or network storage (not supported in Home Basic edition). Complete PC image backup drops support for CD media (anybody *want* to juggle 20 or so CDs? I didn't think so!), but supports all the other drive and media types supported by file backup, including dual-layer DVD media.

Unlike previous Windows backup programs, which ignored modern backup drives in favor of expensive and temperamental tape backups, Windows Vista works with the drives and media everyone uses. Windows Vista backups are easy enough and fast enough to make everyone a backup expert—at last!

TIP

Use these tips to help make your DVD a disc to remember:

- When you add music, change the length of the slideshow to match the length of your music.
- Looking to speed up the tempo? Reduce the picture length down to 3 seconds, select Cut as the transition type, and disable the pan and zoom effects option. Add some music with a beat.
- The Reflections (refer to Figure 13.6) and Video Wall menus provide viewers a preview of the photos on the DVD, and the images change continuously.
- Select a font and font color that match the mood of the DVD. You can use any installed TrueType or OpenType font.


Control Panel ▸ Backup and Restore Center
Search
Tasks
Repair Windows using System Restore
Create a restore point or change settings
See also
Windows Easy Transfer
Back up files
Back up computer
Restore files
Advanced restore
Restore computer

Protect your files and computer by backing them up

Back up files or your entire computer

Create backup copies of your files and folders.

Create a Windows Complete PC Backup and Restore image of your entire computer, which can be used to recover from a hardware failure.

A Windows Complete PC Backup and Restore image has not been created.

Which type of backup should I make?

Restore files or your entire computer

Restore files and folders from a backup.

You can use shadow copies to restore previous versions of files that have been accidentally modified or deleted. What are shadow copies?

Restore your entire computer from a Windows Complete PC Backup and Restore image.

Use System Restore to fix problems and undo changes to Windows.

Figure 13.7

The Windows Backup and Restore Center for Ultimate, Enterprise, and Business editions. Home editions include only backup and restore file options.

Backup Strategies for Easy System Recovery

If you're using my favorite Windows Vista version (Ultimate, of course!) or another version that includes Complete PC Backup and Restore image backups, your backup strategy should look like this:

1. Make a Complete PC Backup and Restore image as soon as you configure Windows Vista to your liking and have installed your favorite applications. By making an image backup at this point, you have the ability to go back to a "zero point" that gives you a working system.
2. Periodically (we'll show you how later in this chapter), run file and folder backups of your system.

In the event of disaster, you can use the Windows Vista Recovery Environment to restore a Complete PC Backup and Restore image to a new or empty hard disk. Then you can restore your file backups.

⇨ To learn more about the Recovery Environment, see "Using the Windows Vista Recovery Environment," p. 379, Chapter 15.

Selecting the Right Media for Your Backup

If you have a USB or FireWire (IEEE-1394) external drive that is large enough to hold an image backup, that's the best drive type to use. You won't need to juggle or label media, or figure out how to keep multiple DVDs stored together to make restoration simple. However, if your Windows installation is less than 30GB, it's not too painful to make an image backup to DVD media, especially to dual-layer DVD media.

TIP

The Complete PC Backup and Restore Image always includes the files on C: drive. You can move your data files to another drive so they won't be included as part of the system image but will be backed up with the files and folder backup.

Creating an Image Backup

As soon as you've fine-tuned your Windows Vista Business, Enterprise, or Ultimate installation, it's time to make the backup—a Complete PC Backup and Restore image, that is.

To start the image backup process, follow these steps:

1. Connect a USB or FireWire external drive or insert a blank DVD (you can also use a secondary internal hard disk).
2. Click Back Up Computer (refer to Figure 13.7). Note that both image and file backup options are protected by UAC.
3. If you have more than one hard disk, specify whether you want to back up additional hard disks.
4. Select a target drive (see Figure 13.8).
5. Click Next. After reviewing your backup settings, click Start Backup.

TIP

Only the system drive (normally C: drive) must be included in an image backup. You have the option to include other drives, but unless they contain vital system data, don't bother. Back up data drives with the files and folders backup feature.

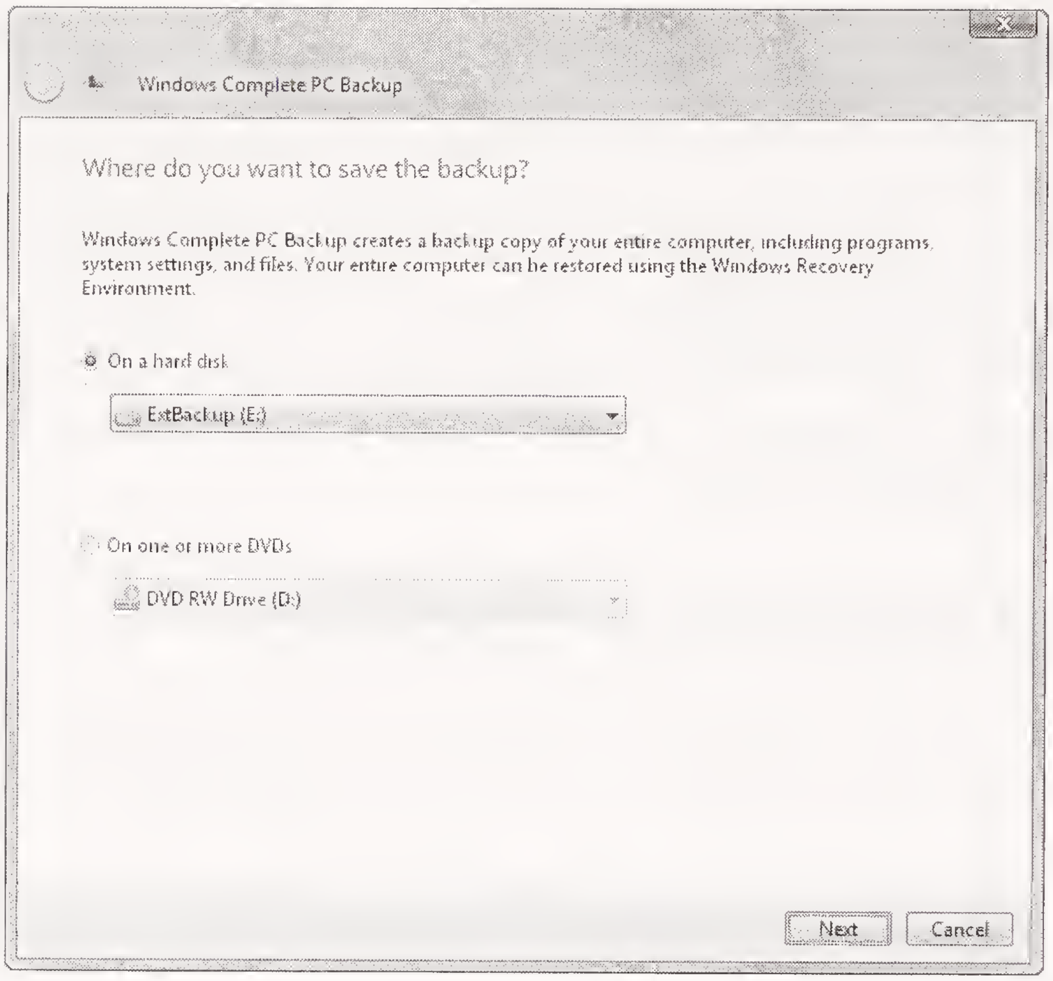
Backing Up to DVD

If you back up to DVD media, you'll be prompted to label each DVD as it's inserted. If the media isn't formatted yet, you'll also be prompted to format it.

Be sure to stay tuned to the end of the process to make sure the backup worked correctly.

⇨ To learn how to restore a backup image, see Chapter 15, "Troubleshooting Windows Vista."

Feature Rating: ***Complete PC Backup***



Where do you want to save the backup?

Windows Complete PC Backup creates a backup copy of your entire computer, including programs, system settings, and files. Your entire computer can be restored using the Windows Recovery Environment.

● On a hard disk

ExtBackup (E:)

○ On one or more DVDs

DVD RW Drive (D:)

Figure 13.8

Selecting a destination for Complete PC Backup.

TIP

If you're using blank DVDs, prepare to be nagged to format each one during the backup process. Click the Don't Ask Again for This Backup option when you insert the first disc to automatically format the remaining media.

Creating a File and Folder Backup

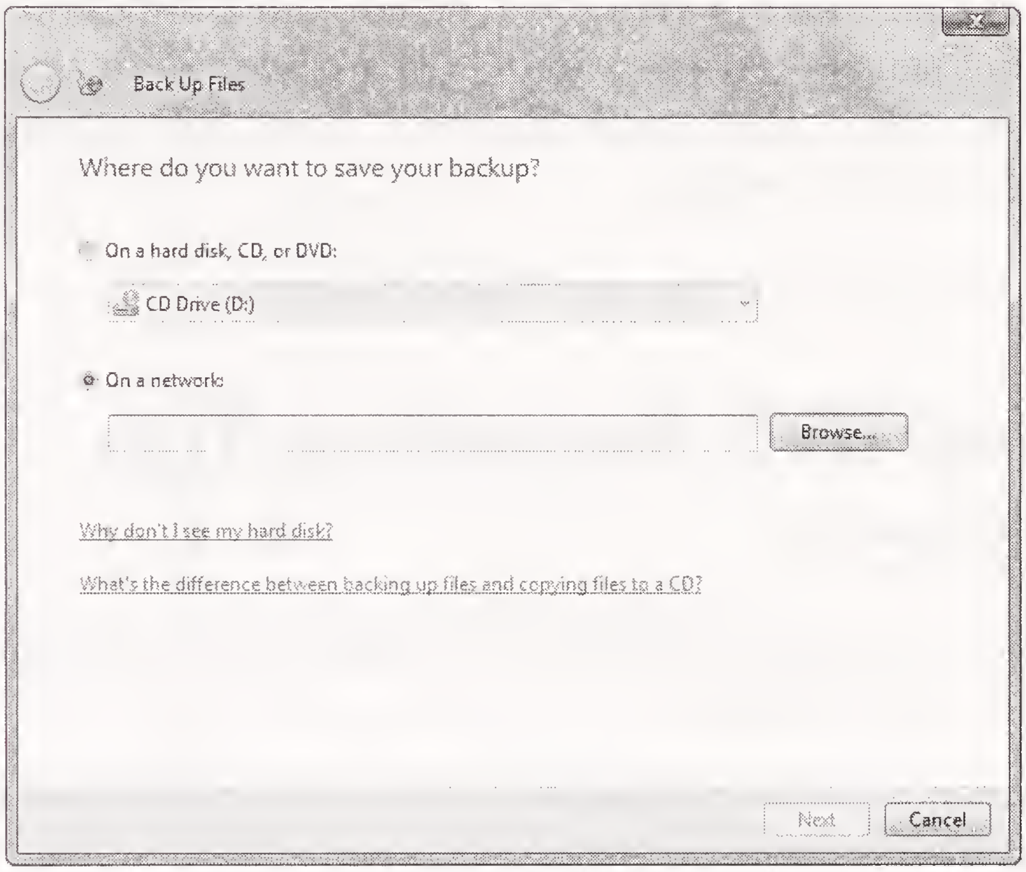
To set up your first file and folder backup with any Vista edition, click the Back Up Files button in the Backup and Restore Center (refer to Figure 13.7). Make sure your external USB or FireWire drive is plugged in if you want to use it for backups.

Select the drive where you want to store your backup (see Figure 13.9), or, if network backups are supported, select the network location for the backup. If you have more than one hard disk, it is selected by default. You can specify only the system drive in such cases.

On the next dialog, specify what types of files to back up. By default, Back Up Files backs up everything in the following categories:

- Image files (photos, scans, drawings, faxes, and so on)
- Music and audio files (WMA, MP3)
- Videos and movies (WMV, MPEG, AVI)

- Windows Media Center recorded TV
- Documents (Word, Excel, PowerPoint, and similar types of files)



Back Up Files

Where do you want to save your backup?

○ On a hard disk, CD, or DVD:

CD Drive (D:)

● On a network:

Browse...
Why don't I see my hard disk?
What's the difference between backing up files and copying files to a CD?
Next
Cancel

Figure 13.9

Specifying a location for file and folder backups.

TIP

You can back up to a network share with most editions (except Home Basic), but keep in mind that "Fast" Ethernet (100Mbps) is a slowpoke compared to even a DVD backup and is tortoiselike compared to a hard disk backup. Don't even *think* about using a Wi-Fi wireless connection for a backup; it's even slower.

However, Back Up Files does not backup files encrypted with EFS, system or program files, files in the Recycle Bin, files on disks formatted with FAT file systems (including FAT32), temporary files, or user profile settings.

To prevent backing up a particular category, clear the check box.

TIP

Use the Back Up Files feature to create backups of specific categories of files by clearing the check marks for all but a particular category.

On the next dialog, specify when (daily, weekly [the default], or monthly), what day of the week, and what time to run the next backup. When you click Save Settings and Start Backup and confirm the command, the initial backup process starts. Note that the backup runs in the background, so you can keep working while the backup continues.

If you are using CD or DVD media, label and swap discs when prompted. At the end of the backup process, you will see a message that the backup completed successfully.

➪ To learn how to restore files from a backup, see Chapter 15.

After years of enduring stripped-down backup and restore utilities that were hard to use, didn't support CD and DVD technologies, and didn't work very well, users are now be rewarded with Windows Vista's new world of fast, reliable backups.

The only "losers" are corporate types who use tape backups. Backup and Restore Center doesn't support these devices, but you can resuscitate the Windows XP Backup Utility and use it in Vista to get access to your older backups on tape or disk. Of course, you can always use third-party tape backup programs when they're Vista-ready.

WARNING

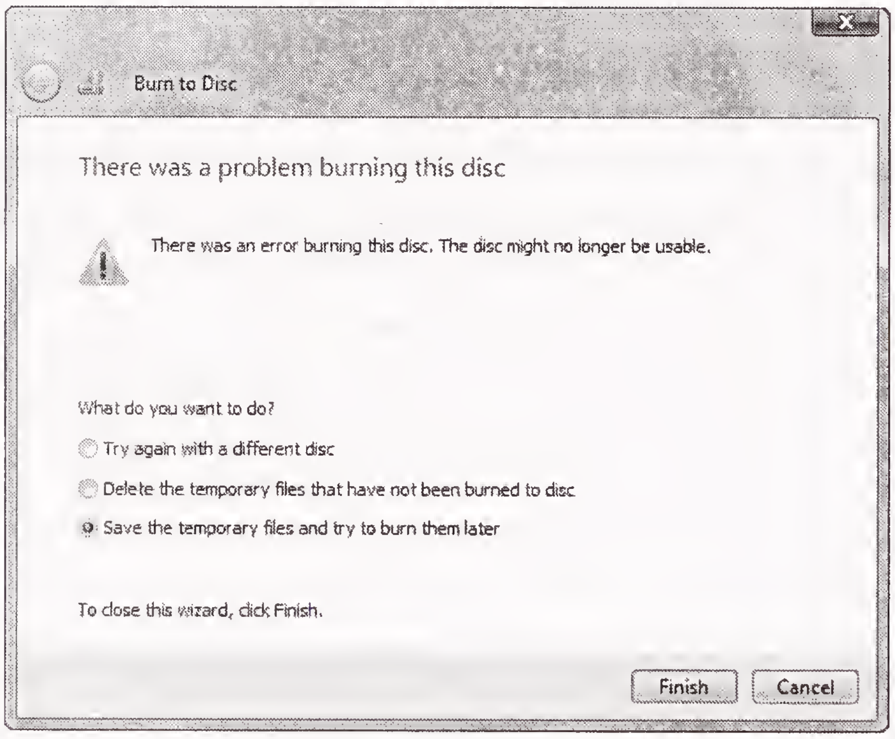
If you use CD or DVD media for automatic backup, make sure the first disc is inserted before the next automatic backup. If you routinely make many changes to your files, you may prefer to use a hard disk or network location for automatic backups to permit the backup to run without intervention or without the possibility of not having media in place. Keep in mind that if the backup uses more than one disc, you'd better be around to change media, and if the media isn't formatted, you'll also need to give permission.

Feature Rating: ***File and Folder backup***

CD and DVD Recording Tips and Tricks

Use the following tips and tricks to make CD and DVD burning faster and more reliable.

- If you see an error message, such as the one shown in Figure 13.10, during a mastering process, your best choice is to save the temporary files and try to burn them later. The option to try the burn again immediately doesn't always work properly, so it's helpful to save your temporary files and close the program if you have problems. If problems persist after you restart, use a cleaning CD or DVD to clean the laser lenses in your drive, or try a different brand of media.



There was a problem burning this disc

There was an error burning this disc. The disc might no longer be usable.

What do you want to do?

○ Try again with a different disc

○ Delete the temporary files that have not been burned to disc

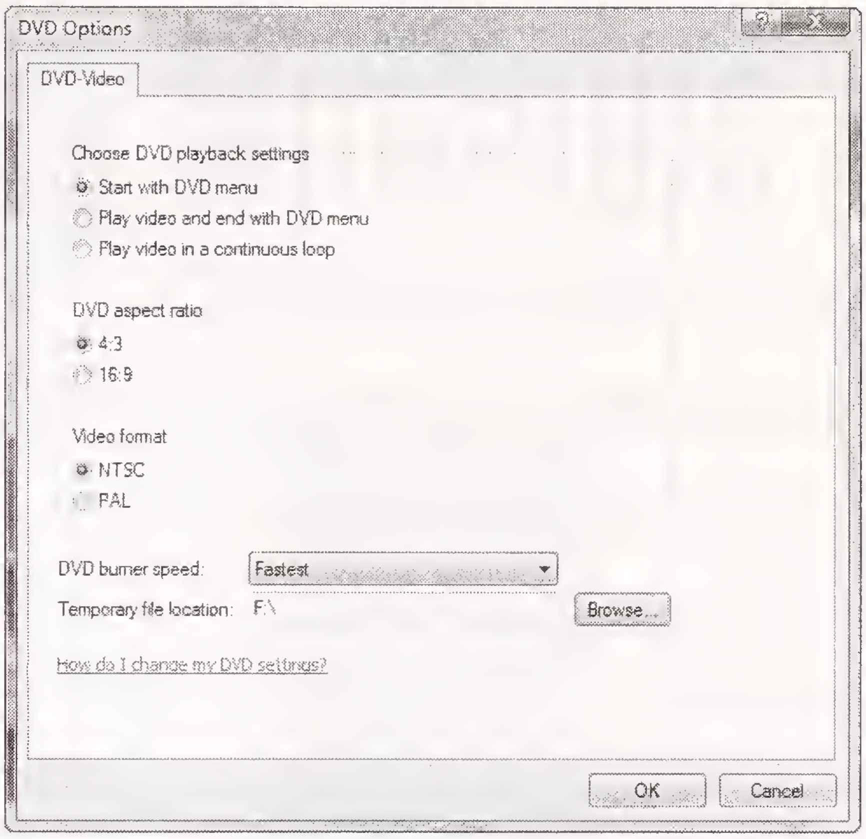
● Save the temporary files and try to burn them later

To close this wizard, click Finish.

Figure 13.10

Bad media? Try again later (the default).

- Get faster DVD-Video encoding by using a secondary hard disk with at least 5GB of empty space for Windows DVD Maker's temporary files. Click the Options link on the main Windows DVD Maker dialog, and use the Browse button to select the drive (see Figure 13.11).



Choose DVD playback settings
● Start with DVD menu
○ Play video and end with DVD menu
○ Play video in a continuous loop

DVD aspect ratio
● 4:3
○ 16:9

Video format
● NTSC
○ PAL

DVD burner speed: Fastest
Temporary file location: F:\

How do I change my DVD settings?

Figure 13.11

Changing the temporary location for DVD encoding files.

- If you're still using CD-RW media, consider preformatting it using Windows Explorer before using it for file backup or other purposes. Depending on the speed of CD-RW media, formatting a single disc could take up to 25 minutes or longer. You'll find that DVD media's a lot faster to format.

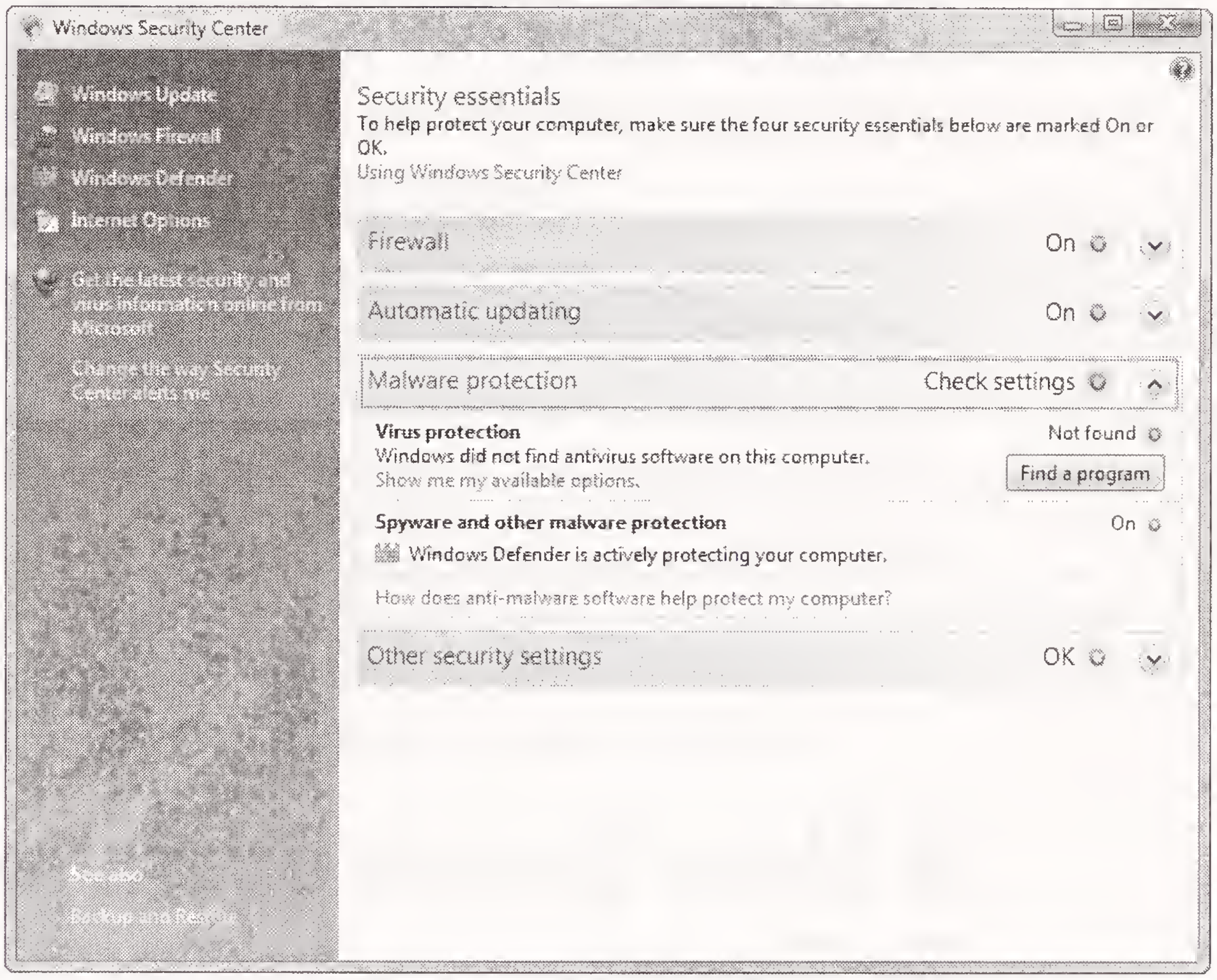
Chapter Fourteen

Protecting Windows Vista

IN THIS CHAPTER

- Computing in Vista's More Secure World
- A More Secure Operating System, By Design
- Managing User Accounts and Family Safety
- Using Windows Security Center
- Using Windows Defender
- Using Windows Firewall
- Using Local Security Policy
- Best and Worst Security Practices

Computing in Vista's More Secure World


Windows Security Center
Windows Update
Windows Firewall
Windows Defender
Internet Options
Get the latest security and virus information online from Microsoft
Change the way Security Center alerts me
See also
Backup and Restore
Find a program

Security essentials

To help protect your computer, make sure the four security essentials below are marked On or OK.

Using Windows Security Center

Firewall On

Automatic updating On

Malware protection Check settings

Virus protection Not found

Windows did not find antivirus software on this computer.

Show me my available options.

Spyware and other malware protection On

Windows Defender is actively protecting your computer.

How does anti-malware software help protect my computer?

Other security settings OK

Ever since Windows and the Internet came of age (about 1995 or so), "Windows security" has been something between an oxymoron and a very bad joke. We've suffered through the "patch of the month club" memberships and the feeling that, if it weren't for Target having adopted it first, the Microsoft logo ought to resemble a bull's-eye. Well, Microsoft is tired of getting kicked around by hackers, crackers, and assorted rogues of cyberspace, and Windows Vista is the first brand-new operating system to roll out of the Redmond shops since Microsoft decided to make security job one.

To make sure that Windows Vista is the most secure Windows version ever, Microsoft includes a huge assortment of security tools and features that will be discussed in this chapter:

- More secure internal architecture
- User Accounts and Family Safety category
- Windows CardSpace
- Windows Security Center
- Windows Defender antispyware
- Windows Firewall (new and improved!)
- Local security policy
- BitLocker (Enterprise and Ultimate editions)

Many of the security features in Vista first rolled out in Windows XP SP2, but Vista makes them stronger by changing the rights that applications and utilities have to access physical memory.

These add to the "lock it down but keep it usable" attitude that the security features in email, web browsing, and networking also provide.

To learn more about security features in email, web browsing, and networking, see Chapter 7, "Managing Your Contacts with Vista"; Chapter 11, "Internet the Windows Vista Way"; and Chapter 12, "Building a Home Network the Windows Vista Way."

A More Secure Operating System, By Design

Windows Vista's internal design is significantly more secure than previous Windows versions in several ways. These include:

- Address space load randomization (ASLR)—Each time you start your system, Vista loads system DLLs at one of 256 address points in the top of the user-mode address space, rather than at a fixed address point as in earlier Windows versions. Similarly, Vista executable files are also installed into randomized address spaces. Applications developed with Microsoft Visual Studio 2005 SP1 can also include randomized load points. Randomized load points minimize the possibility of malware attacks on system files and applications.

- The principle of least access—Windows Vista provides the least amount of access necessary for a normal program or task, whether you are an administrator or a standard user. To run certain tasks (for example, to change group or user access to a printer or a folder), you must run the task as an administrator and provide administrator credentials through the UAC prompt. This principle helps prevent applications from performing unauthorized changes to your system.
- User account control (UAC)—UAC prompts are displayed whenever any application requires administrator-level access to the system, unless UAC is disabled. I recommend you leave UAC enabled, because third-party applications can also trigger a UAC prompt (as will Windows Vista features marked with the Microsoft security shield). It's useful to know when a program needs deeper access than is normally required.

Managing User Accounts and Family Safety

If you're sharing your computer with other users or you're setting up a computer for nonexperts and children to use, the User Accounts and Family Safety category in Control Panel should be on your short list of things to do after you boot Windows Vista the first time.

This category contains three components to this category:

- User Accounts
- Parental Controls
- Windows CardSpace

You can go directly to the most common tasks from the category display (see Figure 14.1), or, if you prefer, you can access each of these components from the Classic View.

Understanding User Accounts

Each computer needs one Administrator account. By default, the account used to set up or install Windows Vista is the Administrator account. Any other accounts you set up should be Standard accounts.

If you still have scars from trying to use Windows XP's Limited accounts (the only account type other than Administrator in XP), relax! Unlike XP's Limited accounts, which were so crippled they couldn't run much of anything, Windows Vista's Standard accounts really work.

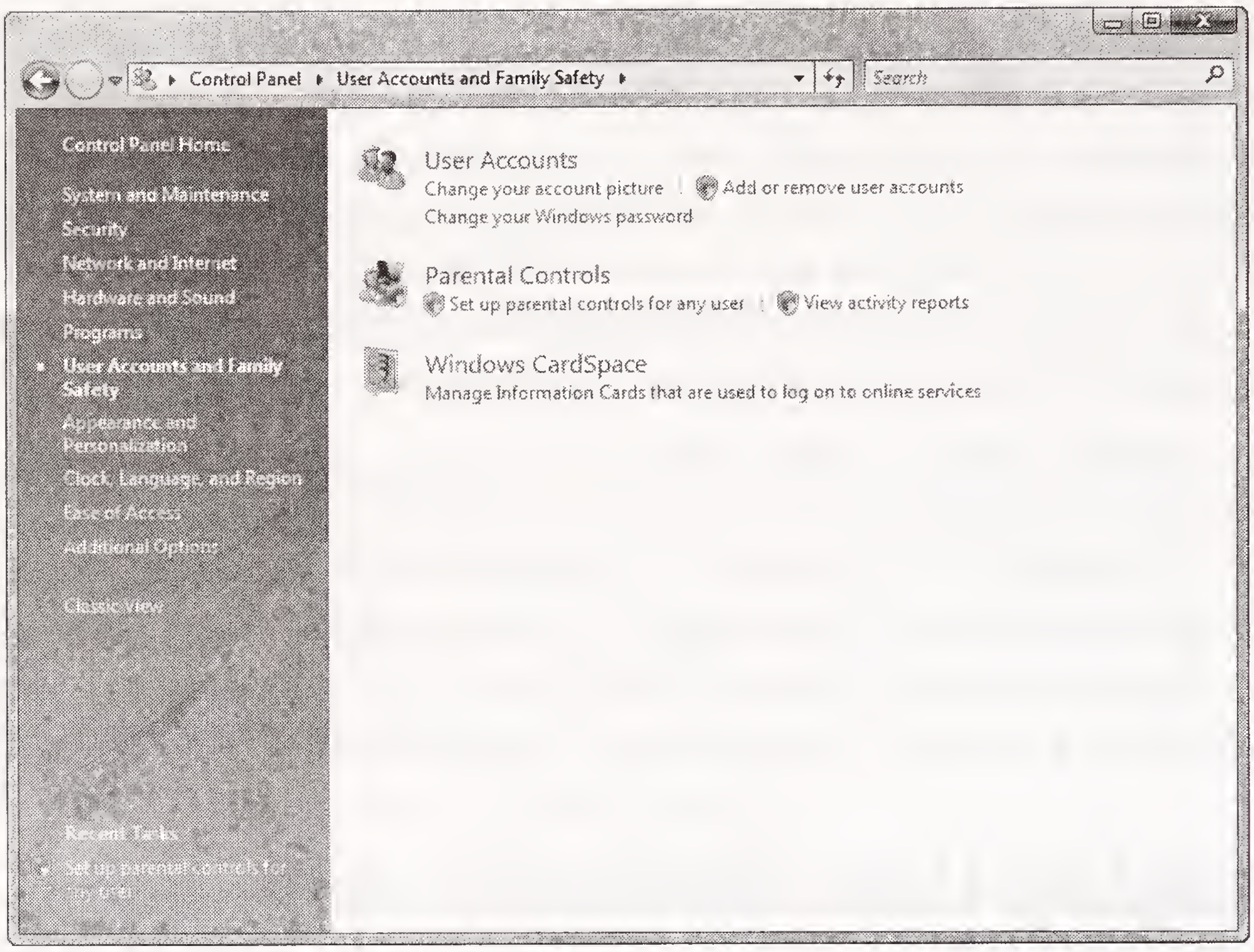

Control Panel
User Accounts and Family Safety
Search
Control Panel Home
System and Maintenance
Security
Network and Internet
Hardware and Sound
Programs
User Accounts and Family Safety
Appearance and Personalization
Clock, Language, and Region
Ease of Access
Additional Options
Classic View
Recent Tasks
Set up parental controls for any user
User Accounts
Change your account picture
Add or remove user accounts
Change your Windows password
Parental Controls
Set up parental controls for any user
View activity reports
Windows CardSpace
Manage Information Cards that are used to log on to online services

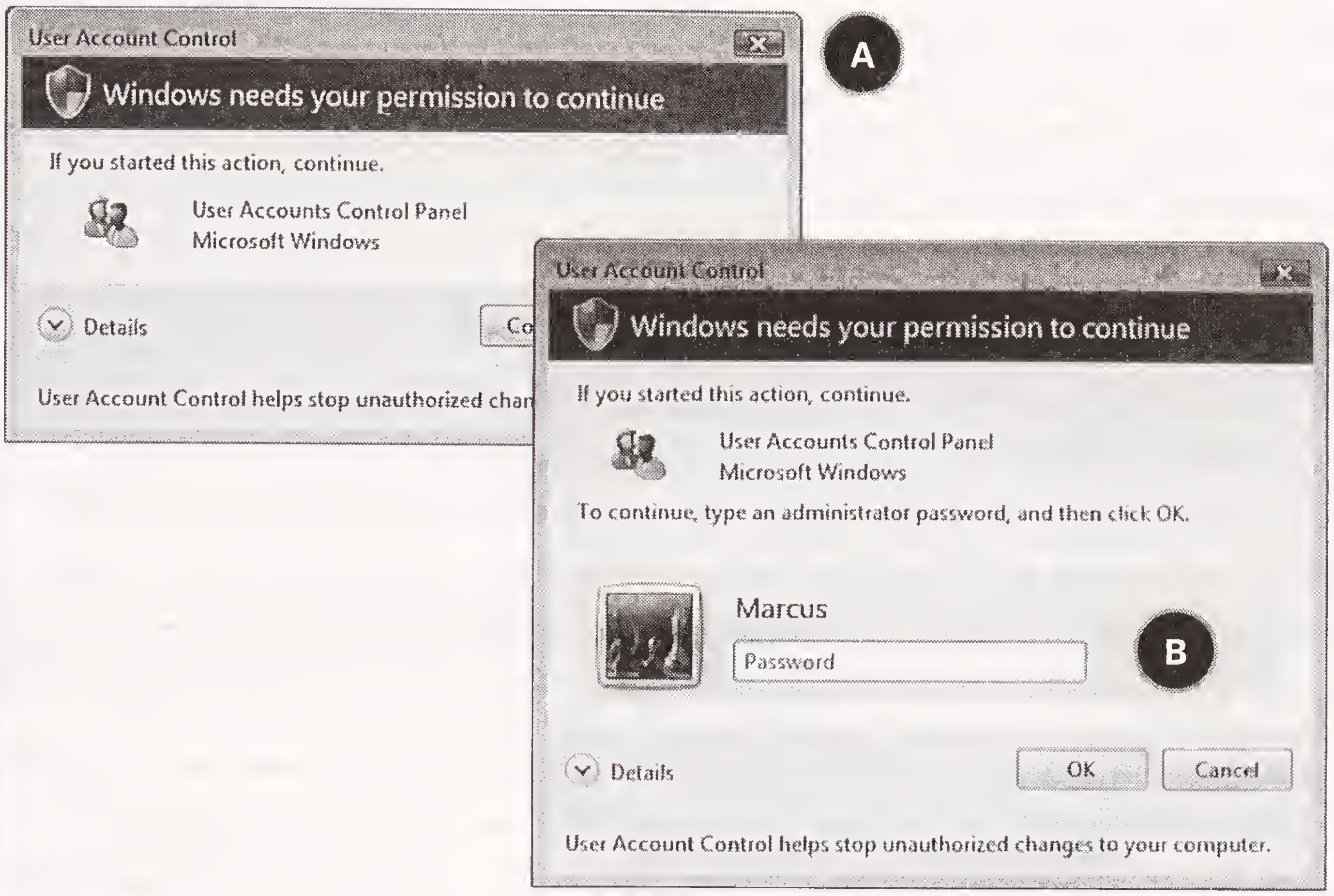
Figure 14.1

The User Accounts and Family Safety category is the main focus of security in Windows Vista.

The important thing to understand about Standard users is that they can do anything that an Administrator can, *provided it's approved by the system's administrator*. How does this work? When you (the administrator) try to install a program or run any task marked with the Windows Vista security shield (refer to Figure 14.1 for typical examples), you must click Continue on the User Account Control pop-up to continue (see Figure 14.2 A). But, when a Standard user tries to perform a task, she must provide the administrator's password to continue, as in Figure 14.2 B.

So, how many standard user accounts do you need? One for each user. Even if you have very young children who want to use the computer, give each one a user account. Each user can decorate the desktop with personalized wallpaper, choose a meaningful user icon, and make his slice of the system a truly "personal" computer.

If you're managing business systems running Windows Vista, don't forget that you can also use Parental Controls at the office. As you'll see in the following sections, the ability to control computer use and receive activity reports is too good an idea to leave at home!



Windows needs your permission to continue

If you started this action, continue.

User Accounts Control Panel
Microsoft Windows

User Account Control helps stop unauthorized chan

User Account Control

Windows needs your permission to continue

If you started this action, continue.

User Accounts Control Panel
Microsoft Windows

To continue, type an administrator password, and then click OK.

User Account Control helps stop unauthorized changes to your computer.

Figure 14.2

The User Account Control dialog boxes.

A User Account Control in an administrator account.

B User Account Control prompts a standard user for an administrator password.

Setting Up a User Account

To create a user account, click the Add or Remove User Accounts link shown previously in Figure 14.1. You will provide a username, select an account type, and click Create Account.

To set up a password, click the new account, click Create a Password, enter the password, and confirm it. You can also provide a password hint.

➪ To learn more about creating a password reset disk, see "Creating a Password Reset Disk," p. 332, this chapter.

It may be tempting to skip using passwords, but the administrator account, at least, must have a password, or else anyone using the system can pretend to be the administrator and reconfigure the system. You might not want to put passwords on very young children's accounts, but everyone else needs one.

When you set up a user, Windows Vista dips into its collection of pictures and randomly assigns a picture. To change the picture, click Change Your Account Picture. To use one of the standard pictures, select it, and click Change Picture. Prefer to use something else? Click Browse for More Pictures and look for a GIF, BMP, JPG, or PNG picture file. After you select it, click Open.

WARNING

Think losing a password is no big deal? Think again! If you, the almighty administrator, get called on to make up a new password for a clueless standard user, here's what goes down the drain:

- All of the user's EFS-encrypted files (Let's hope there aren't any!)
- The personal certificates
- The user's list of stored passwords (It will be tougher to log back in to protected websites the next time.)

Make sure each user makes a password reset floppy disk (including you!). To do so, use the Create a Password Reset Disk link on the Tasks pane of the User Accounts dialog.

TIP

You can't turn off the Windows Vista Welcome screen, but you can help prevent hostile programs from spoofing it by enabling Secure Logon.

To set up secure logon, open the Start menu, select Help and Support, and type **secure logon** into the Search box. Click the Enable or Disable Secure Logon link from the list of search hits, and click the Advanced User Accounts link (protected, of course, by User Account Control). Click the Advanced tab, and click the Require users to press Ctrl+Alt+Delete check box. Now, to log on to Windows, users will need to press Ctrl+Alt+Del to display the Welcome screen.

No matter how many (or how few) user accounts are on a system, the Windows Vista login screen displays an icon for each user account. To log in, click the appropriate icon and enter the password for that account.

Creating a Password Reset Disk

To prevent a user from being locked out of his account, be sure to create a password reset disk for each user. To run this task, you must log in to each account, open Control Panel, open the User Accounts and Family Safety category, open User Accounts, and click the Create a Password Reset Disk task.

This opens the Forgotten Password Wizard. Click Next in the opening dialog to continue. Insert a floppy disk or connect a USB drive, and select the drive you want to use on the next screen. Click Next. Enter the current user password when prompted, and click Next to create the disk. Click Next and then click Finish. Label the disk and put it away.

You only need to create a password reset disk once, even if you change passwords later.

If you get the reset disk mixed up with data disks, it's useful to know that the password key file is stored as userkey.psw

Configuring User Account Control

User Account Control (UAC) is one of the fundamental building blocks of Windows Vista security. On a system that has standard users, UAC prevents them from running administrator-level tasks unless the administrator provides permission. However, if you have a system that has no standard users, you may prefer to disable UAC's prompting for you to click Continue before you can run certain tasks.

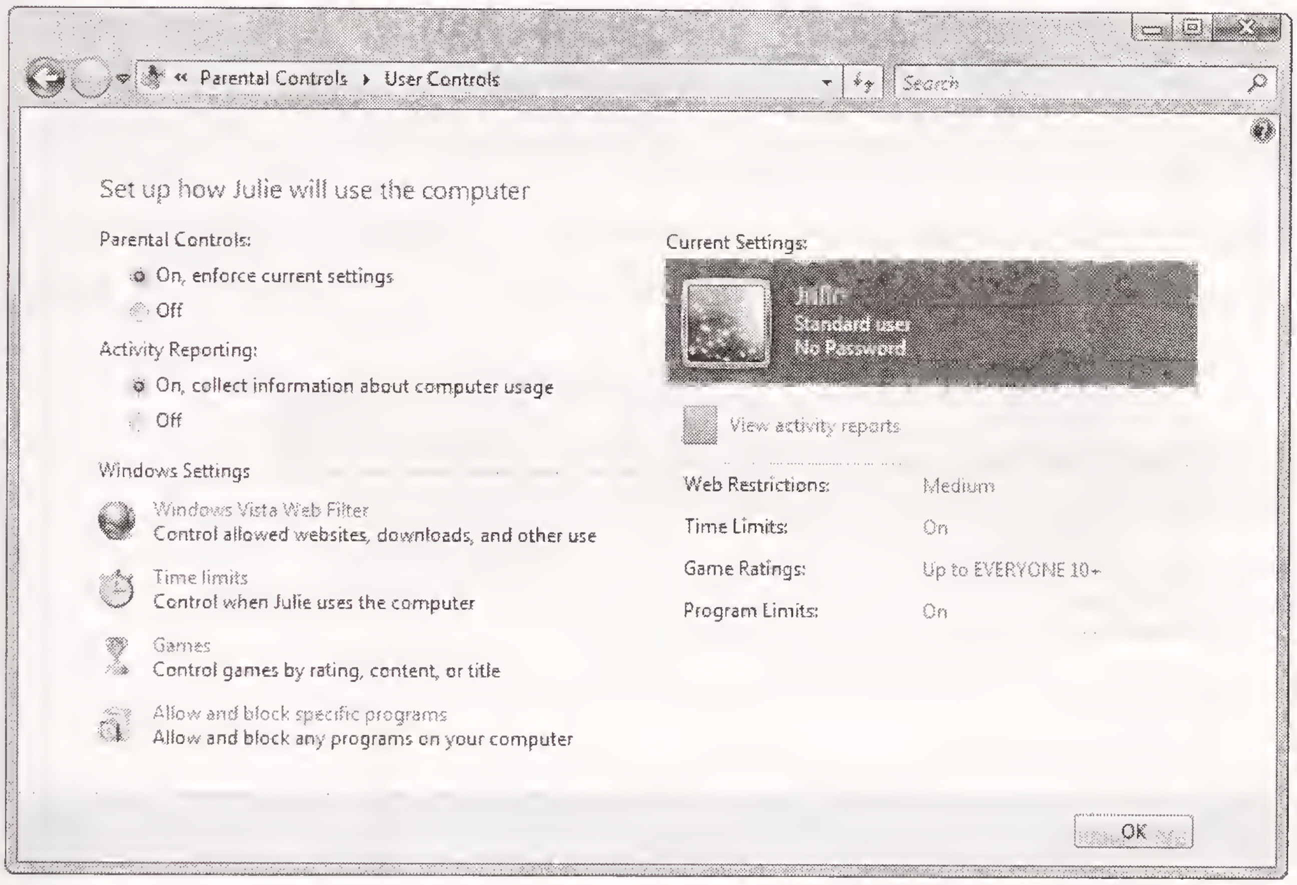
To change how UAC works, open User Accounts and click Turn User Account Control On or Off. To disable UAC, clear the Use User Account Control check box. Clicking the empty check box reenables UAC. Restart your system when prompted to apply changes.

Feature Rating: ***User Accounts***

Using Parental Controls

After you set up the kids with their own (standard) accounts, you're halfway to the goal of using Windows Vista to help protect them from themselves. To finish the job, go back to the main User Accounts and Family Safety dialog and click Parental Controls.

To apply Parental Controls to a user, select the user. The User Controls dialog shown in Figure 14.3 appears.



Set up how Julie will use the computer

Parental Controls:

● On, enforce current settings
○ Off

Activity Reporting:

● On, collect information about computer usage
○ Off

Windows Settings

Windows Vista Web Filter
Control allowed websites, downloads, and other use

Time limits
Control when Julie uses the computer

Games
Control games by rating, content, or title

Allow and block specific programs
Allow and block any programs on your computer

Current Settings:

Julie
Standard user
No Password

View activity reports

Web Restrictions: Medium
Time Limits: On
Game Ratings: Up to EVERYONE 10+
Program Limits: On

Figure 14.3

The User Controls dialog after enabling Parental Controls for this user.

When you turn on Parental Controls, you also enable activity reports and can set limits on computer use in four categories:

- Web surfing
- Time limits
- Games
- Specific programs

WARNING

Even if you're the only user on a system, UAC prompts can warn you of a task you didn't start (such as a rogue startup program) that needs permission to make Registry changes or other system-level changes. However, if you disable UAC, you'll never know about such programs.

Think hard about the security consequences of doing without UAC if you have any standard accounts on a system (including accounts that are configured to use Parental Controls)—or just take our advice and don't do it!

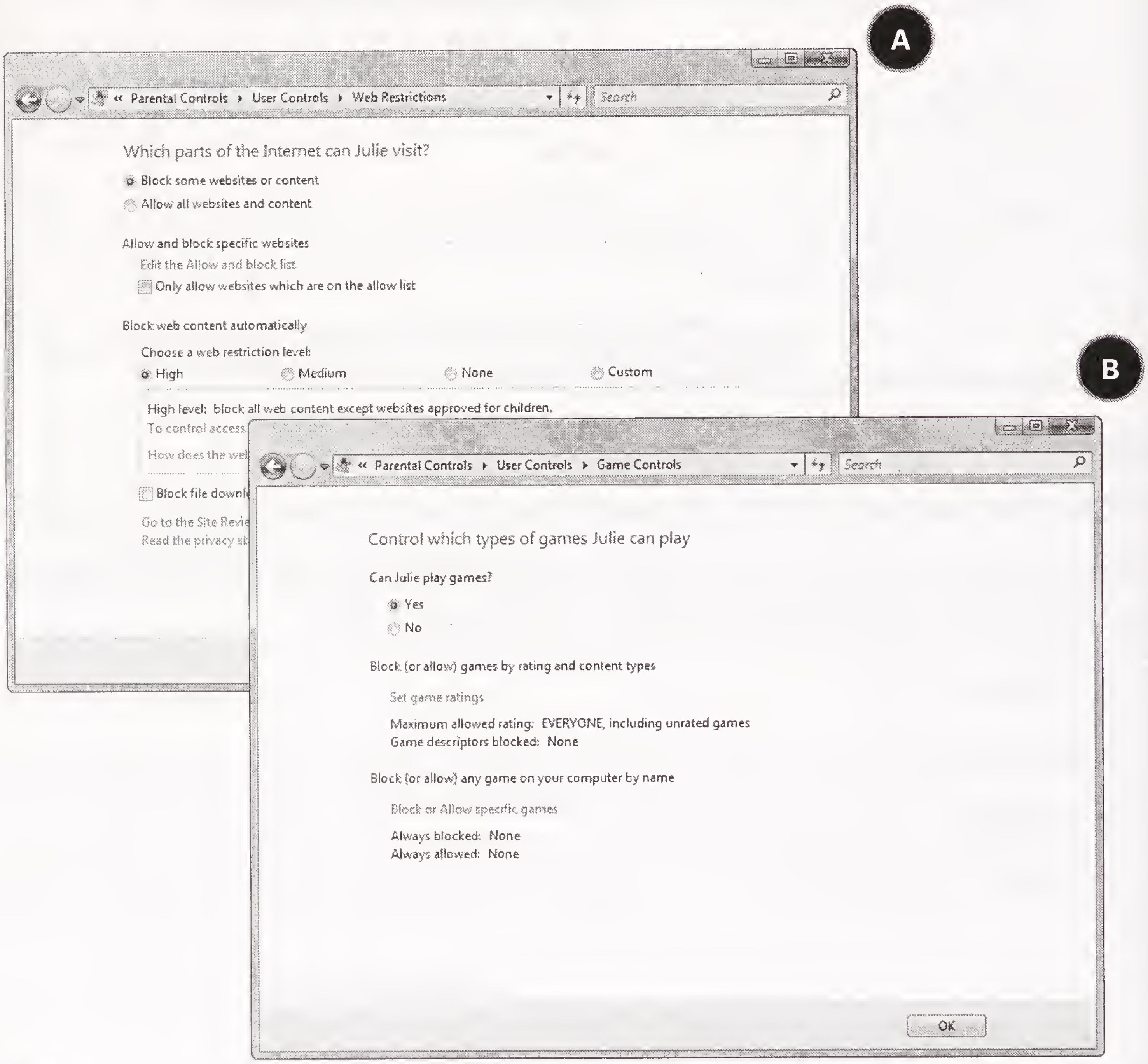
TIP

To put the kibosh on downloads for a particular user, click the Block File Downloads check box shown in Figure 14.4 A.

Windows Vista's web filter (refer to Figure 14.4 A) defaults to the Medium setting, which blocks unsuitable content and web content in these categories: mature content, pornography, drugs, hate speech, and weapons. Other options include High (permits only websites suitable for children), None (no restrictions), and Custom, which opens a check box with options to block up to 11 different types of unsuitable content.

Use the Game Controls dialog (refer to Figure 14.4 B) to stop goofing off by preventing any games from being played, block games above a specified rating from being played, or block or allow specific games. Select the Set Game Ratings link, and you discover more than 30 content restrictions you can apply individually in addition to specifying the maximum game rating permitted.

The time limits filter allows computer use anytime by default; it's up to you to fill in the times you want to keep a particular user off the system. In this


A
« Parental Controls ▸ User Controls ▸ Web Restrictions
Search
B
« Parental Controls ▸ User Controls ▸ Game Controls
Search
OK

Which parts of the Internet can Julie visit?

● Block some websites or content
○ Allow all websites and content

Allow and block specific websites

Edit the Allow and block list
☐ Only allow websites which are on the allow list

Block web content automatically

Choose a web restriction level:
● High ○ Medium ○ None ○ Custom

High level: block all web content except websites approved for children.
To control access
How does the wel

☐ Block file downl

Go to the Site Revie
Read the privacy st

Control which types of games Julie can play

Can Julie play games?

● Yes
○ No

Block (or allow) games by rating and content types

Set game ratings

Maximum allowed rating: EVERYONE, including unrated games
Game descriptors blocked: None

Block (or allow) any game on your computer by name

Block or Allow specific games

Always blocked: None
Always allowed: None

A Configuring web restrictions.

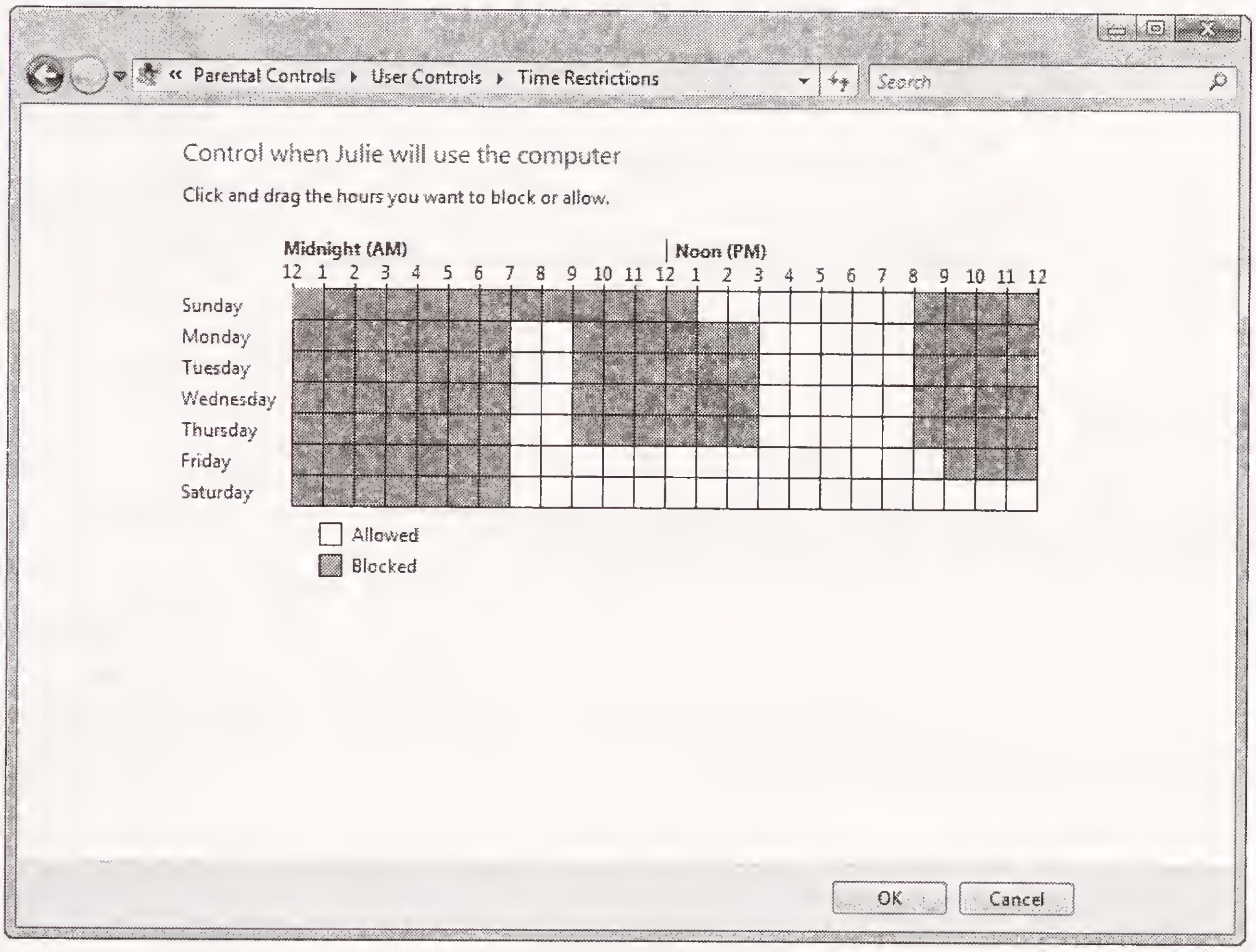
B Configuring game restrictions.

Figure 14.4

Windows Vista's web filter dialog boxes.

example, computer access is limited to times before and after school during the week—playing hooky means no computer time for you! And, nothing says "go to bed now!" like a message that you can't log on because of time restrictions.

The Allow and Block Specific Programs dialog has two options: Use All Programs (the default) or Use Only the Programs I Allow. If you select the second option, Windows Vista searches your system for all types of programs. Check the programs you want the user to run, and leave unchecked the programs you want to block



Control when Julie will use the computer

Click and drag the hours you want to block or allow.

	Midnight (AM)												Noon (PM)											
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Sunday	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	▨	▨	▨	▨
Monday	▨	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	▨	▨	▨	▨
Tuesday	▨	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	▨	▨	▨	▨
Wednesday	▨	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	▨	▨	▨	▨
Thursday	▨	▨	▨	▨	▨	▨	▨	☐	☐	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	▨	▨	▨	▨
Friday	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	▨	▨	▨
Saturday	▨	▨	▨	▨	▨	▨	▨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

☐ Allowed
▨ Blocked

Figure 14.5

A typical example of time restrictions for a young computer user.

Even with all of the protection provided by Parental Controls, it's still possible for your kids (or your employees, for that matter) to do stuff you'd prefer they didn't do. Enable Activity Reporting (refer to Figure 14.3) to keep an eye on activities when you're not looking over their shoulders. To see reports for a particular user, click View Activity Reports, and select the user. Figure 14.6 shows a typical activity report.

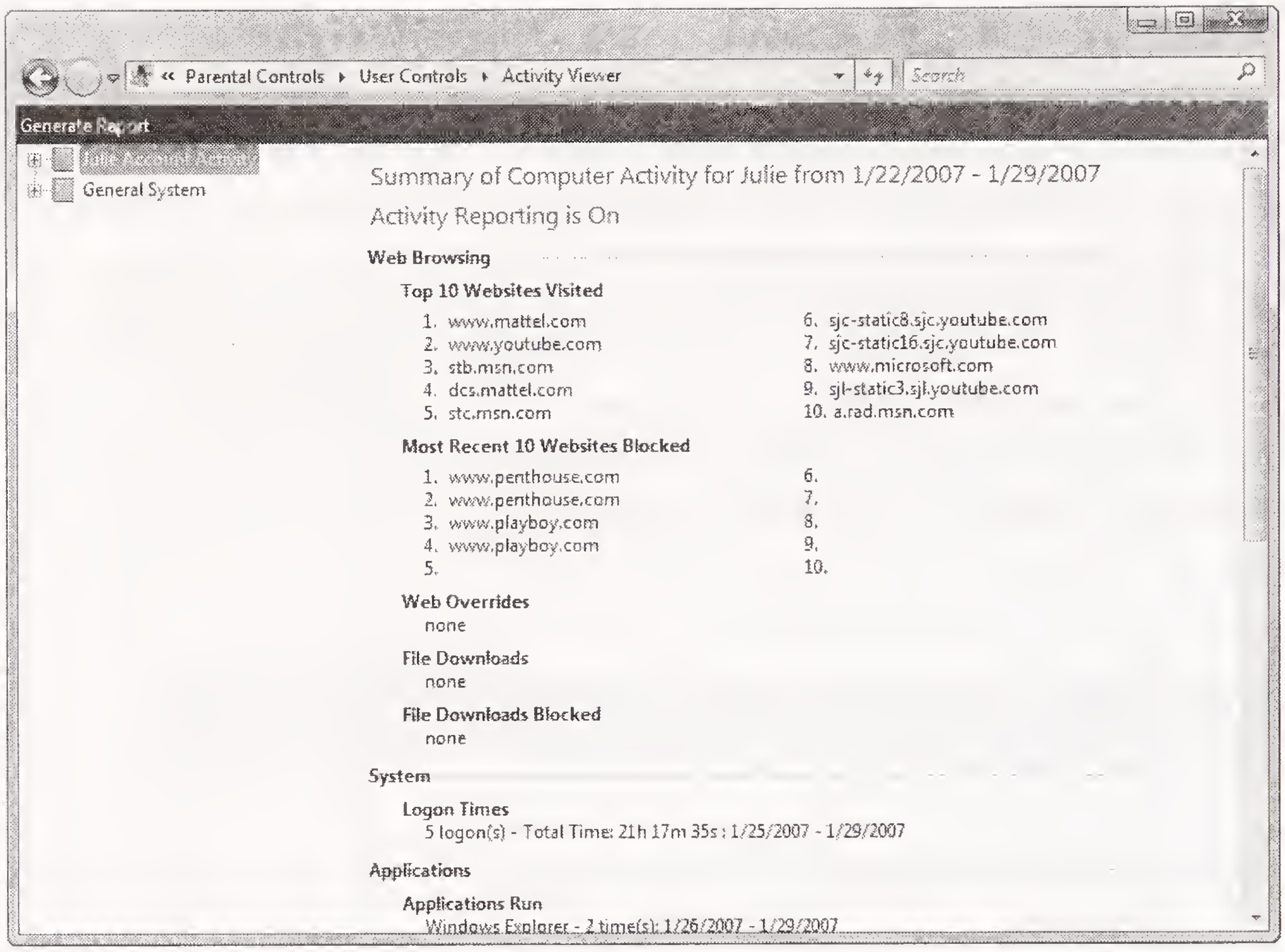
Feature Rating: ***Parental Controls***

TIP

The Game Controls dialog can be used to block only games that Windows Vista recognizes as games. Don't be surprised if a lot of recent or older games don't show up on the Game Controls dialog. If a game is not recognized by Windows Vista, you can use the Allow and Block Specific Programs Parental Control option to block it (see Figure 14.5). Use Browse to locate the program's executable file if it doesn't show up in the list of installed programs.

NOTE

To block a particular hour, click its white square, and the square turns blue. To unblock a particular hour, click its blue square, and the square turns white.



Summary of Computer Activity for Julie from 1/22/2007 - 1/29/2007

Activity Reporting is On

Web Browsing

Top 10 Websites Visited

1. www.mattel.com
2. www.youtube.com
3. stb.msn.com
4. dcs.mattel.com
5. stc.msn.com
6. sjc-static8.sjc.youtube.com
7. sjc-static16.sjc.youtube.com
8. www.microsoft.com
9. sjl-static3.sjl.youtube.com
10. a.rad.msn.com

Most Recent 10 Websites Blocked

1. www.penthouse.com
2. www.penthouse.com
3. www.playboy.com
4. www.playboy.com
5.
6.
7.
8.
9.
10.

Web Overrides
none

File Downloads
none

File Downloads Blocked
none

System

Logon Times
5 logon(s) - Total Time: 21h 17m 35s : 1/25/2007 - 1/29/2007

Applications

Applications Run
Windows Explorer - 2 time(s): 1/26/2007 - 1/29/2007

Figure 14.6

A typical activity report.

NOTE

If you prefer ContentProtect (www.contentwatch.com) for parental control, you don't need to switch when you move up to Windows Vista. ContentWatch's ContentProtect feature will work with Windows Vista. If you prefer Net Nanny, it's now a ContentWatch product. See the ContentWatch website for details.

Using Windows CardSpace

As the old joke goes, "on the Internet, nobody knows you're a dog." As a result, chat-room perverts and phishers are having a wonderful time fooling everyone else in cyberspace and making life difficult for us honest people.

The brand-new Windows CardSpace applet (originally known as InfoCard) was developed to help make it easier to establish, protect, and use your online identity for various types of transactions.

CardSpace is designed to eventually replace the current hodgepodge of secure website authentication methods by providing a consistent way for users to determine the true identity of a website and providing information needed by the website for access, e-commerce, or other reasons.

CardSpace manages information with two types of digital cards known as *Information Cards*:

- Personal cards are created by the individual user containing information such as name, age, address, phone numbers, email addresses, and so forth.

- Managed cards are created by a business or organization and are used to verify your membership.

Both types of cards are encrypted and can also be protected by PIN numbers for additional security.

The easiest way to understand how CardSpace works is to compare the digital Information Cards it uses to actual cards in your wallet. Here are a couple of examples:

- You're asked to verify your age to enter an age-restricted establishment or website. In the physical world, you'd show your driver's license. With CardSpace, you would send a personal card containing your name and birthdate to the website.
- You want to access a members-only store. In the physical world, you'd show your ID card. With CardSpace, you would send a managed card provided by the store to the store's website to gain access.

In both cases, you'll be prompted by your web browser (Internet Explorer 7.0 or another browser with a CardSpace add-on) to send the appropriate card before you can continue using the website.

To get started, click the Windows CardSpace icon in User Accounts and Family Safety (refer to Figure 14.1) and click OK on the Welcome to Windows CardSpace dialog. When you work with CardSpace, Windows Vista opens a separate workspace (just as it does with User Account Control) to protect your information from tampering. CardSpace Information Cards are also encrypted when they are created or installed.

Click Add a Card, click Add, and select Create a Personal Card or Install a Managed Card.

When you select Create a Personal Card, the Edit Card dialog shown in Figure 14.7 A appears. Fill in the information requested, and click Save. To edit a card, select it, and click Edit.

When you select Install a Managed Card, click Browse on the following screen and navigate to the location where you saved the managed Information Card (.crd) file. After selecting it, click Continue.

NOTE

CardSpace is an integral part of .NET Framework 3.0 (included in Windows Vista) and requires Internet Explorer 7.0 or greater (or a browser with a CardSpace add-on) to operate. Windows XP SP2 and Windows Server 2003 users can also use CardSpace by downloading .NET Framework 3.0 and IE 7 from the Microsoft website.

NOTE

You don't need to worry about using CardSpace until websites start using it as their preferred (or only) method of confirming identity. To learn more about CardSpace, see Microsoft's CardSpace website at http://cardspace.netfx3.com/.

TIP

When you create or edit a card, use the Browse button to locate a favorite photo. You can use photos to help you distinguish between different types of cards or exercise your creativity (see Figure 14.7 C for examples).

To assign an information card a PIN number, select the card and then click Lock Card in the Tasks pane. Enter a PIN number and then confirm it. Click Lock (see Figure 14.7 B) to complete the process.

The Select a Card to Preview dialog places a padlock icon on each PIN-protected card (see Figure 14.7 C).

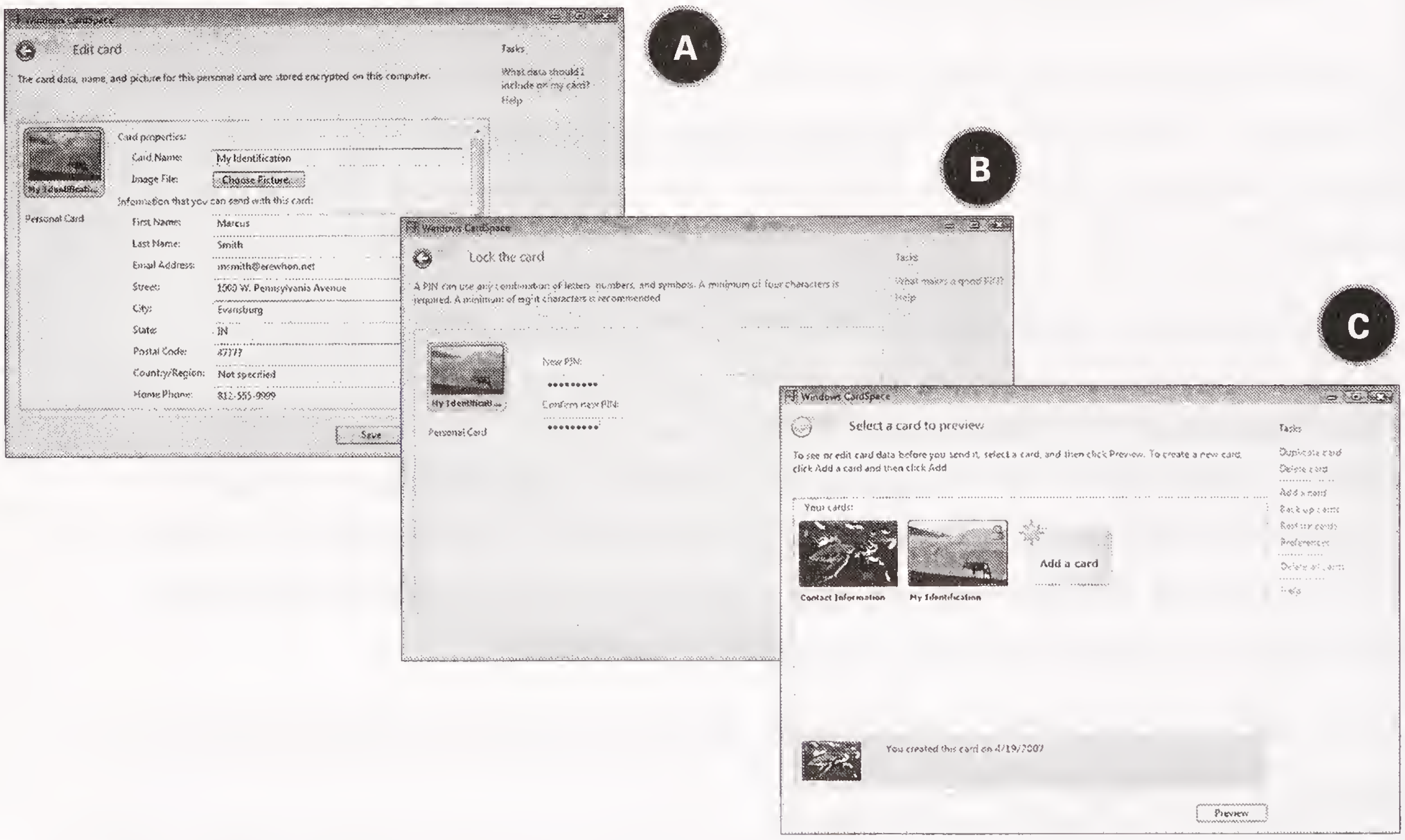
You should protect your Information Cards against loss or tampering. In addition to assigning each card a PIN number, you can also back up cards to a file (you can also use this method to transfer them to a different computer). Use the restore option to restore backed-up cards. See the Tasks pane in Figure 14.7 C.

It's way too early to tell whether CardSpace will really catch on as a widespread method of securing and transmitting sensitive information, so I won't rate it now, but it looks as it if could be useful—and secure. Only time will tell if e-commerce vendors will decide that CardSpace is worth taking up space on their servers.

A Creating a personal card.

B Creating a PIN to lock a card.

C Viewing locked and unlocked cards.


A
B
C
Windows CardSpace
Tasks
What data should I include on my card?
Help
Choose Picture...
My Identification
Personal Card
Save
What makes a good PIN?
Contact Information
Add a card
Duplicate card
Delete card
Add a card
Back up cards
Restore cards
Preferences
Delete all cards
Help
Preview

Edit card

The card data, name, and picture for this personal card are stored encrypted on this computer.

Card properties:

Card Name: My Identification

Image File:

Information that you can send with this card:

First Name: Marcus
Last Name: Smith
Email Address: msmith@erewhon.net
Street: 1500 W. Pennsylvania Avenue
City: Evansburg
State: IN
Postal Code: 47777
Country/Region: Not specified
Home Phone: 812-555-9999

Lock the card

A PIN can use any combination of letters, numbers, and symbols. A minimum of four characters is required. A minimum of eight characters is recommended

New PIN: ••••••••••
Confirm new PIN: ••••••••••

Select a card to preview

To see or edit card data before you send it, select a card, and then click Preview. To create a new card, click Add a card and then click Add

Your cards:

You created this card on 4/19/2007

Figure 14.7

Creating a Personal Card.

Using Windows Security Center

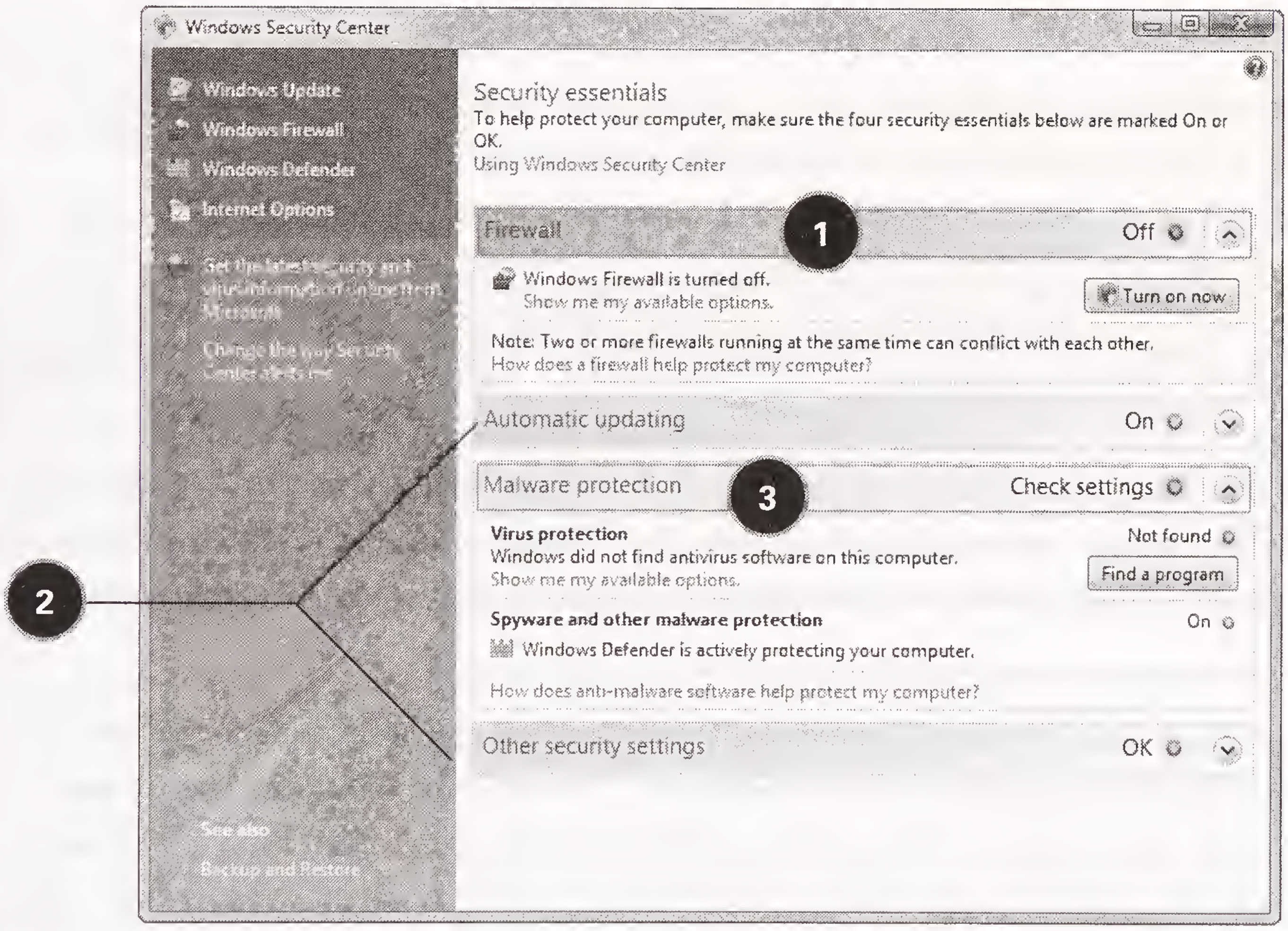
The Windows Security Center doesn't look much different from its Windows XP (with Service Pack 2) predecessor, but it adds important new protection features and easier access to security-related tasks.

Use the right pane of the Security Center to check the status of four security features:

- Windows Firewall
- Windows Update/Microsoft Update automatic updates
- Malware (virus and spyware) protection
- Other security settings (Internet security and User Account Control settings)

To make it easier to check security than with Windows XP's version, the Vista version of Windows Security Center uses a green background for a feature that provides maximum protection (On), a yellow background for a feature that provides only partial protection (Check Settings), and a red background for a feature that provides no protection (Off).

Figure 14.8 demonstrates each of these settings.


Windows Security Center
Windows Update
Windows Firewall
Windows Defender
Internet Options
Get the latest security and virus information online from Microsoft
Change the way Security Center alerts me
See also
Backup and Restore
1
2
3

Security essentials

To help protect your computer, make sure the four security essentials below are marked On or OK.

Using Windows Security Center

Firewall Off

Windows Firewall is turned off.

Show me my available options.

Turn on now

Note: Two or more firewalls running at the same time can conflict with each other.

How does a firewall help protect my computer?

Automatic updating On

Malware protection Check settings

Virus protection Not found

Windows did not find antivirus software on this computer.

Show me my available options.

Find a program

Spyware and other malware protection On

Windows Defender is actively protecting your computer.

How does anti-malware software help protect my computer?

Other security settings OK

1 Red background (feature off)

2 Green background (feature on)

3 Yellow background (check settings)

Figure 14.8

The Windows Security Center.

To get more information about each setting, click the down-arrow next to the setting. For example, Figure 14.8 shows that although the spyware portion of Malware Protection is enabled, no antivirus program is installed.

Use the left pane to configure Windows Update and Internet Options. User Account Control is configured through the User Accounts dialog.

➪ To learn more about automatic updates, see "Using Windows Update and Microsoft Update," Chapter 15, p. 354.

➪ To learn more about Internet Options, see Chapter 11, "Internet the Windows Vista Way."

➪ To configure User Account Control (UAC), see "Configuring User Account Control," p. 332, this chapter.

👍 *Feature Rating:* ***Windows Security Center***

Using Windows Defender

By default, Windows Defender provides real-time protection and daily automatic quick scans for spyware, but it also offers a variety of more advanced protection tools and features.

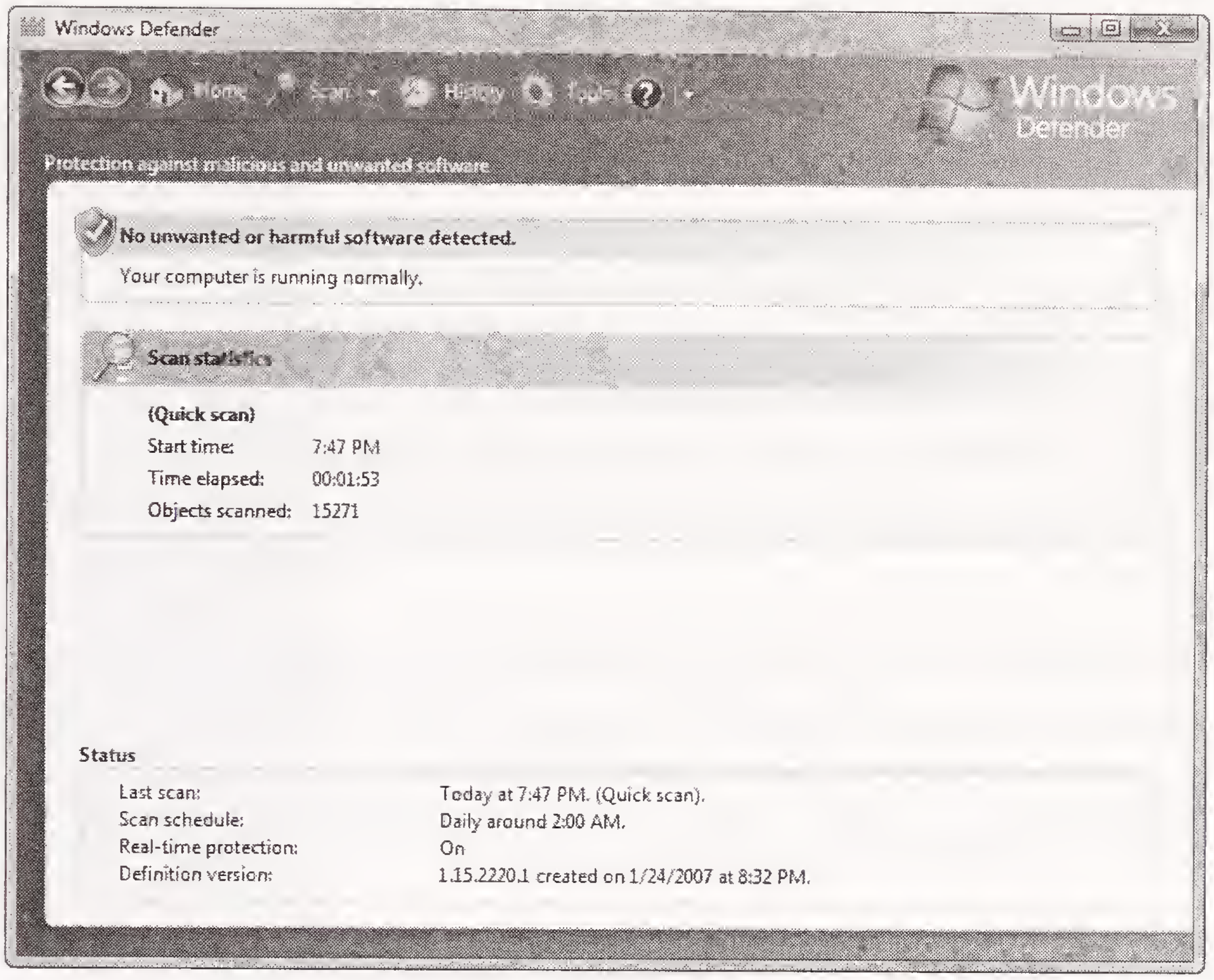
To configure Windows Defender and scan your system, click Windows Defender in the task pane of the Windows Security Center (refer to Figure 14.8).

From the main Windows Defender dialog (see Figure 14.9), you can scan for spyware, check scan history, or open a tools menu to access configuration and advanced protection features.

The Status display shown at the bottom of Figure 14.9 lists the date and time of the last scan, when a daily scan is scheduled, whether real-time protection is enabled, and the spyware definition file version and date in use.

Click the History icon to display all items detected by Windows Defender since the last time the history was cleared. The upper pane of the History dialog lists the item, alert level, action taken, date, and status. The lower pane displays the item's category, description, advice, and resources used by the item (process id or PID number, Registry keys, run key, filename, and location).

Click the Allowed Items link to see a list of items you have allowed to run; click the Quarantined Items link to see a list of items you have blocked from running.



Protection against malicious and unwanted software

No unwanted or harmful software detected.

Your computer is running normally.

Scan statistics

(Quick scan)

Start time: 7:47 PM
Time elapsed: 00:01:53
Objects scanned: 15271

Status

Last scan: Today at 7:47 PM. (Quick scan).
Scan schedule: Daily around 2:00 AM.
Real-time protection: On
Definition version: 1.15.2220.1 created on 1/24/2007 at 8:32 PM.

Figure 14.9

Windows Defender.

By default, systems using Windows Defender are basic members of SpyNet, and Windows Defender is configured to send information to Microsoft about software it detects and the actions you or Windows Defender take in response. This information is used to help improve Windows Defender's spyware detection and solution features. You can also upgrade to an advanced SpyNet membership, which provides additional protection or opt out of SpyNet by using the Change Settings link in the History dialog.

The pull-down Scan menu offers Full Scan and Custom Scan options as well as the default Quick Scan. Use Full Scan to check your entire system for spyware, or Custom Scan to check specified drives or folders.

Click Tools from any Windows Defender menu to display the Tools and Settings dialog. This menu provides access to the Software Explorer, the Options menu, and the Windows Defender website.

Software Explorer is the easiest way to discover details about the software in your system. Select a category from the pull-down menu to see the following:

- Startup Programs
- Currently Running Programs
- Network Connected Programs
- Winsock Service Providers

Each category lists programs by vendor. When you select a category and choose a program from the list in the left pane, the right pane displays version, file location, and other details about the program, including its SpyNet status.

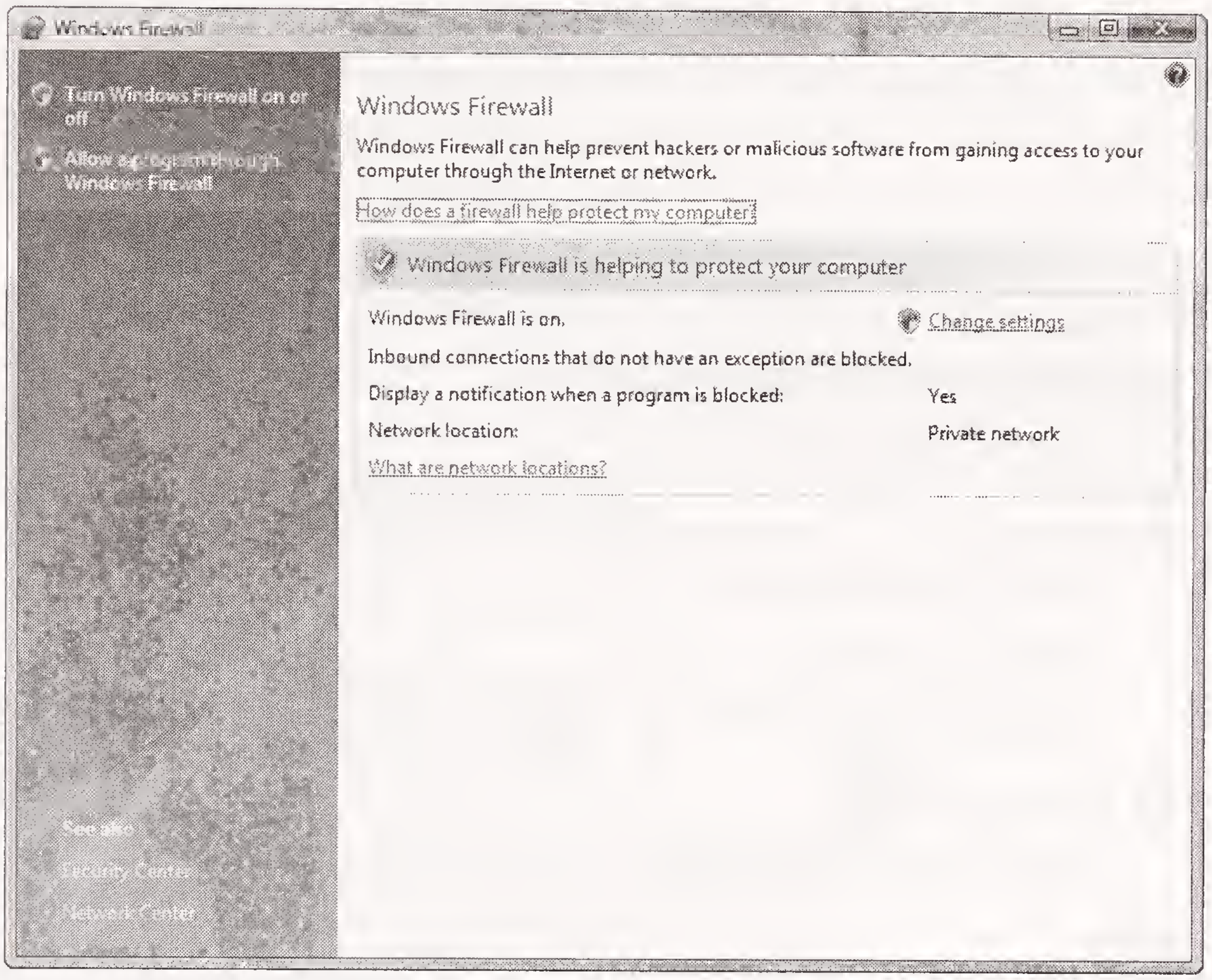
Windows Defender is automatically updated by Windows Update/Microsoft Update. However, you can check for updates any time you want through the Help pull-down menu. Click Check for Updates, and Windows Defender will make sure it's up to date. Watch the notification area for update status.

Feature Rating: ***Windows Defender***

Using Windows Firewall

Windows Firewall (see Figure 14.10) is a component of the Security category of Control Panel. Its main dialog looks a lot different from its Windows XP predecessor, and the differences are more than skin-deep: You get an easy-to-understand status report, and its task pane makes it easy to configure the program or jump to the Network and Security Center features. But the biggest changes are inside:

- Windows Firewall now includes many more preconfigured exceptions to select from, reflecting new network features included in Windows Vista.
- Windows Firewall can unblock Windows features (such as File and Printer Sharing) with a single click on a pop-up dialog box when requested by a Windows component, rather than requiring you to open the Windows Firewall dialog.
- Windows Firewall can also be configured to provide advanced firewall rules, including rules for outbound traffic, through the Microsoft Management Console.


Windows Firewall
Turn Windows Firewall on or off
Allow a program through Windows Firewall
See also
Security Center
Network Center
How does a firewall help protect my computer?
Change settings
What are network locations?

Windows Firewall

Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or network.

Windows Firewall is helping to protect your computer

Windows Firewall is on.

Inbound connections that do not have an exception are blocked.

Display a notification when a program is blocked: Yes

Network location: Private network

Figure 14.10

The Windows Firewall main dialog.

Changing Defaults for Windows Firewall

To adjust how Windows Firewall works, click any of the UAC-protected links shown in Figure 14.10. Click Change Settings and Turn Windows Firewall On or Off to open the firewall properties sheet's General tab (see Figure 14.11 A). Vista's Windows Firewall has three settings:

- On (with exceptions)
- On (block incoming connections)
- Off

The Block All Incoming Connections check box shown in Figure 14.11 A disables any exceptions normally permitted by the Exceptions tab shown in Figure 14.11 B.

Click Allow a Program Through Windows Firewall (refer to Figure 14.10) to go directly to the Exceptions tab shown in Figure 14.11 B. Use the Exceptions tab to permit inbound traffic from a variety of programs and devices as selected (unchecked programs and

TIP

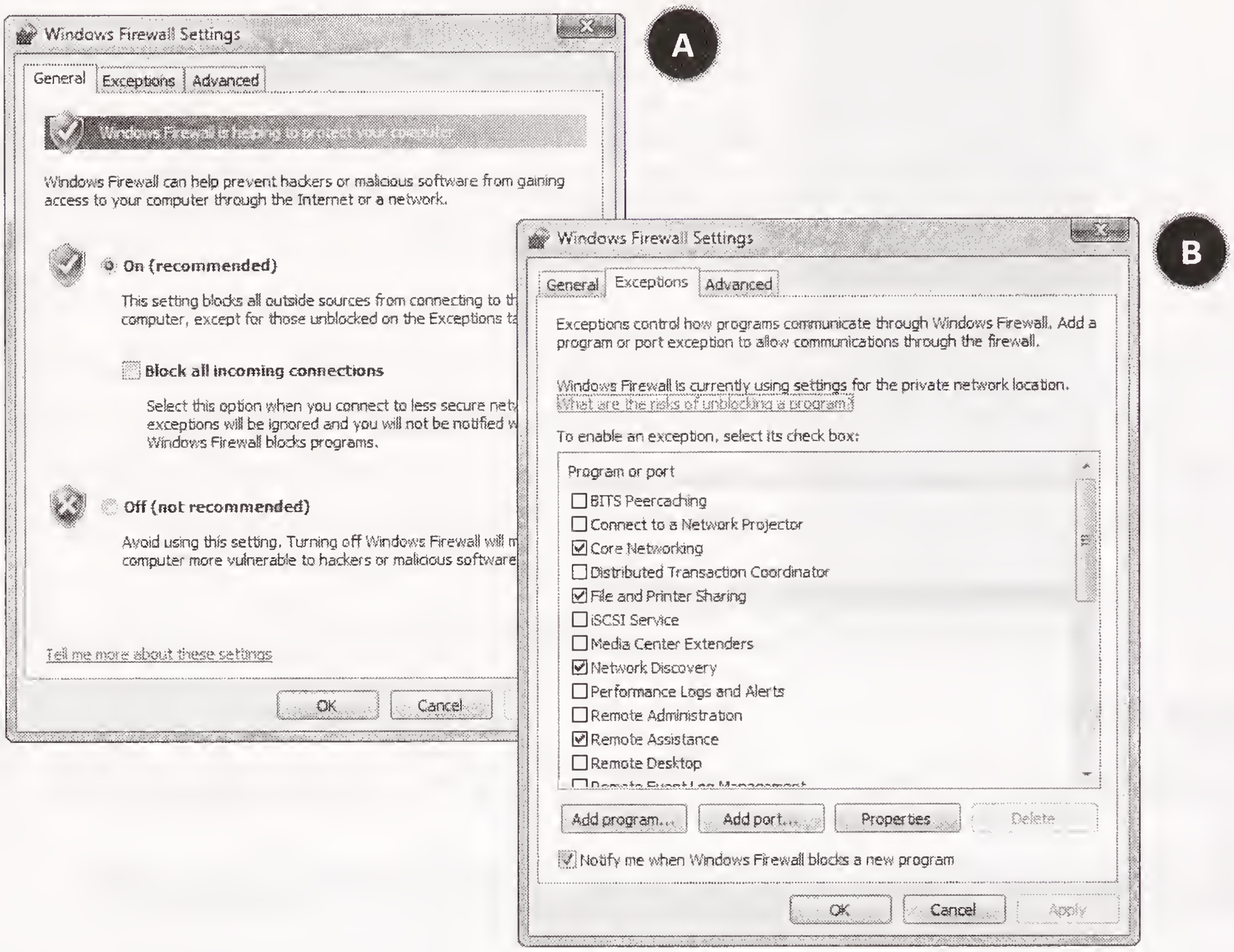
The Block All Incoming Connections check box is designed to make your network connection more secure when you use an unsecured network, such as a wireless hotspot. You'll still be able to watch YouTube videos, check email, and surf the Internet while waiting for your next flight, but other computers won't be able to see (or steal from) your network shares.

Don't forget to disable this option when you get back to your home or office network, or other users on the network will be locked out of your shares!

devices are blocked). Use it to enable devices such as Media Center Extenders and other computers via Remote Desktop to connect to your computer.

A Use the General tab to enable or disable the firewall or disable exceptions.

B Use the Exceptions tab to enable traffic from specified programs or services to pass through the firewall.



Windows Firewall Settings

General | Exceptions | Advanced

Windows Firewall is helping to protect your computer

Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or a network.

● On (recommended)

This setting blocks all outside sources from connecting to th computer, except for those unblocked on the Exceptions ta

☐ Block all incoming connections

Select this option when you connect to less secure net exceptions will be ignored and you will not be notified w Windows Firewall blocks programs.

○ Off (not recommended)

Avoid using this setting. Turning off Windows Firewall will m computer more vulnerable to hackers or malicious software

Tell me more about these settings

OK | Cancel

Windows Firewall Settings

General | Exceptions | Advanced

Exceptions control how programs communicate through Windows Firewall. Add a program or port exception to allow communications through the firewall.

Windows Firewall is currently using settings for the private network location.
What are the risks of unblocking a program?

To enable an exception, select its check box:

Program or port
☐ BITS Peercaching
☐ Connect to a Network Projector
☑ Core Networking
☐ Distributed Transaction Coordinator
☑ File and Printer Sharing
☐ iSCSI Service
☐ Media Center Extenders
☑ Network Discovery
☐ Performance Logs and Alerts
☐ Remote Administration
☑ Remote Assistance
☐ Remote Desktop

Add program... | Add port... | Properties | Delete

☑ Notify me when Windows Firewall blocks a new program

OK | Cancel | Apply

Figure 14.11

The Windows Firewall Settings dialog box.

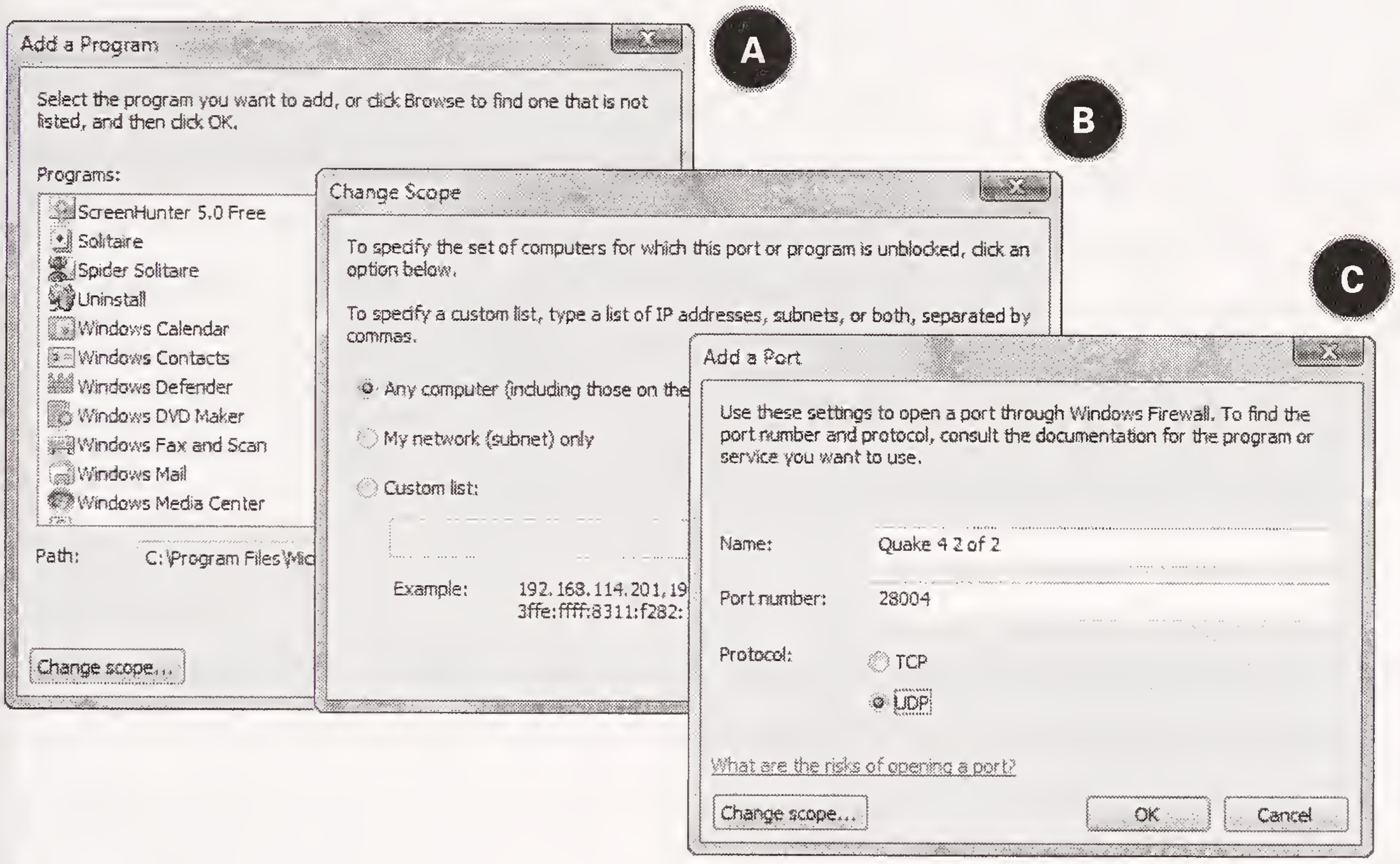
WARNING

To find out what a particular item on the Exceptions tab does, select it and click Properties. You'll see an explanation of the item, as well as the services needed to make it work. Unblock only what you need to make your network work properly.

You can also use the Exceptions tab to unblock programs that aren't listed, such as games that need network or Internet connections. Click Add Program (refer to Figure 14.11 B) and select the program to unblock from the list provided (see Figure 14.12 A), or click Browse to find programs that aren't listed.

If you're unblocking a game, use the Change Scope dialog (see Figure 14.12 B) to specify what computers are affected by the unblocking option: all computers (including Internet), your network, or a custom list. If you want to unblock a network game that's played only on the local network, select My Network (Subnet) Only. If you want to unblock a game that's played online, select Any Computer.

The other method you can use to enable online access is the Add a Port dialog (see Figure 14.12 C). However, this method requires you to enter the TCP or UDP port number you need to leave open for network access. You cannot list a range of port numbers, but can only enter a single port at a time. Thus, for a game such as World of Warcraft and its Blizzard downloader utility, you would need to create a separate entry for TCP ports 3724 and 6112 as well as UDP ports 6881 through 6999! Some programs might require you to enter many more TCP or UDP ports. In addition to being clumsy to set up, this method leaves these ports open to any computer in the scope you specify all the time, not just when you're playing a particular game.


A
B
C
Add a Program
Programs:
ScreenHunter 5.0 Free
Solitaire
Spider Solitaire
Uninstall
Windows Calendar
Windows Contacts
Windows Defender
Windows DVD Maker
Windows Fax and Scan
Windows Mail
Windows Media Center
Change scope...
Change Scope
Add a Port
Change scope...
OK
Cancel

Select the program you want to add, or click Browse to find one that is not listed, and then click OK.

Path: C:\Program Files\Mic

To specify the set of computers for which this port or program is unblocked, click an option below.

To specify a custom list, type a list of IP addresses, subnets, or both, separated by commas.

● Any computer (including those on the

○ My network (subnet) only

○ Custom list:

Example: 192.168.114.201,19
3ffe:ffff:8311:f282:

Use these settings to open a port through Windows Firewall. To find the port number and protocol, consult the documentation for the program or service you want to use.

Name: Quake 4 2 of 2

Port number: 28004

Protocol: ○ TCP ● UDP

What are the risks of opening a port?

A Adding a program to the Exceptions list.

B Specifying a scope for the exception.

C Specifying an exception by port number.

Figure 14.12

Adding programs and unblocking games in Windows Vista.

The Advanced tab (not shown) is a lot less advanced than its counterpart in Windows XP. Use it to select what network(s) you want Windows Firewall to manage, and to restore the firewall's defaults if you need to start over.

The Restore Defaults button wipes out any exceptions you created previously. Use it only if you've really fouled up your firewall settings!

WARNING

If you use a router to connect your computer to the Internet, instead of using a direct connection to a modem, you may also need to configure your router to pass through traffic on specified TCP and UDP ports to the computer playing a particular online game. See your router's documentation and help screens for more information about port forwarding.

What's in a (Port) Name?

What are TCP and UDP ports? Technically, each port provides a connection for a program or service running on a network or the Internet. For example, IE or other web browsers use TCP port 80. IRC programs use TCP port 194. Some services, such as RADIUS authentication, use particular UDP ports instead of, or in addition to, TCP ports. If you're not a network geek, it may be easier to compare them to TV channels: Your browser must use "channel" 80 to send and receive web page requests, and your IRC client must use "channel" 194. If either end of a connection does not have the open port(s) required by the other end of the connection, the program or service cannot run. Many games may use a half-dozen or more TCP and UDP ports.

How many ports are there? They range from 0–65535, but only a few of them are so-called "well-known" ports assigned to particular standard devices or services. For the terminally curious or the network managers out there, see http://www.iana.org/assignments/port-numbers for more information. If you're wondering about the port numbers used by popular online games, visit http://www.gameconfig.co.uk/. After you visit this site and check out your favorite games, you'll know why it makes sense to use the Add Program method to set up exceptions to the firewall!

Unfortunately, although Windows Firewall provides decent protection against unwanted inbound traffic, it requires you to tangle with the Microsoft Management Console to set up rules for controlling outbound traffic. Why? Other commercial and free firewalls make outbound traffic control as easy as popping up a dialog when a program tries to access the Internet and selecting one of the following options: Stop, Go, Remember This Setting, Ask Me Again Next Time. Why can't Microsoft?

The other major gripe I have is the inability to add a range of TCP or UDP ports in a single dialog when it's necessary to set up exceptions on a port-number basis. Again, other programs can do it, so why can't Microsoft? Here's hoping that somebody in Redmond is planning a major update for this feature—and soon.

👎 *Feature Rating:* ***Windows Firewall***

Windows Firewall with Advanced Security

The standard Windows Firewall interface is sufficient for most uses. However, the standard interface doesn't provide any control over outbound traffic. If you are a network manager who needs control over outgoing traffic without using a third-party firewall, want to manage the firewall on remote computers or via group policy, or need to manage IPSec configuration for virtual private networks (VPNs), you need Windows Firewall with Advanced Security, and only the Ultimate, Business, and Enterprise editions have it.

To start it, open the Control Panel, System and Maintenance Category, Administrative Tools. Double-click Windows Firewall with Advanced Security, continue through the UAC prompt, and the multitalented Microsoft Management Console rolls it out for you.

By using Windows Firewall with Advanced Security, you can create program, port, predefined service, and custom rules to manage both inbound and outbound traffic, and you can export rules for use on other computers. You can also log problems for use in troubleshooting and set up specific configurations for IPsec VPN authentication. You can also manage the firewall from the command line with `netsh advfirewall` commands or via Group Policy.

Windows Firewall with Advanced Security is a powerful tool, but is overkill for home or small-office users. Home or small-office users who need a two-way firewall should consider third-party two-way firewalls from the usual suspects (Zone Labs, Symantec, and so forth).

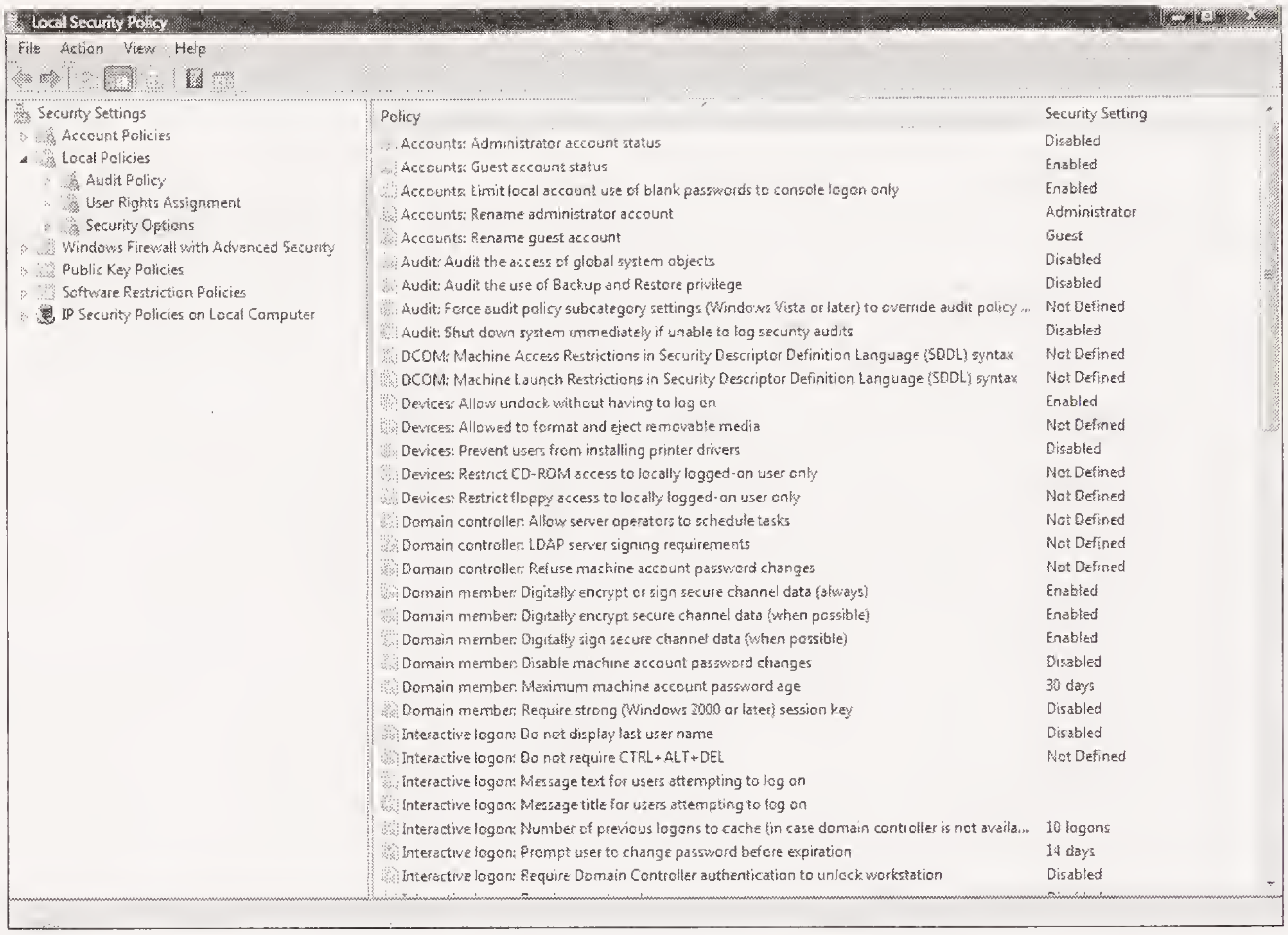
To learn more about configuring Windows Firewall with Advanced Security, go to http://www.microsoft.com/downloads/ and enter "Introduction to Windows Firewall" as the search term to locate the white paper "Introduction to Windows Firewall with Advanced Security" (MS Word format).

Using Local Security Policy

If you need to change security-related system defaults, the Business, Enterprise, and Ultimate editions provide a powerful MMC-based tool called Local Security Policy.

To start Local Security Policy, click the Start orb, All Programs, Accessories, Command Prompt. Type `secpol.msc /s` and press Enter. After you provide credentials to UAC, the Local Security Policy dialog opens.

To control accounts, devices, network access, User Account Control defaults, and other features, open the Local Policies node in the left pane and then click Security Options to display the dialog shown in Figure 14.13.



Policy	Security Setting
Accounts: Administrator account status	Disabled
Accounts: Guest account status	Enabled
Accounts: Limit local account use of blank passwords to console logon only	Enabled
Accounts: Rename administrator account	Administrator
Accounts: Rename guest account	Guest
Audit: Audit the access of global system objects	Disabled
Audit: Audit the use of Backup and Restore privilege	Disabled
Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy ...	Not Defined
Audit: Shut down system immediately if unable to log security audits	Disabled
DCOM: Machine Access Restrictions in Security Descriptor Definition Language (SDDL) syntax	Not Defined
DCOM: Machine Launch Restrictions in Security Descriptor Definition Language (SDDL) syntax	Not Defined
Devices: Allow undock without having to log on	Enabled
Devices: Allowed to format and eject removable media	Not Defined
Devices: Prevent users from installing printer drivers	Disabled
Devices: Restrict CD-ROM access to locally logged-on user only	Not Defined
Devices: Restrict floppy access to locally logged-on user only	Not Defined
Domain controller: Allow server operators to schedule tasks	Not Defined
Domain controller: LDAP server signing requirements	Not Defined
Domain controller: Refuse machine account password changes	Not Defined
Domain member: Digitally encrypt or sign secure channel data (always)	Enabled
Domain member: Digitally encrypt secure channel data (when possible)	Enabled
Domain member: Digitally sign secure channel data (when possible)	Enabled
Domain member: Disable machine account password changes	Disabled
Domain member: Maximum machine account password age	30 days
Domain member: Require strong (Windows 2000 or later) session key	Disabled
Interactive logon: Do not display last user name	Disabled
Interactive logon: Do not require CTRL+ALT+DEL	Not Defined
Interactive logon: Message text for users attempting to log on	
Interactive logon: Message title for users attempting to log on	
Interactive logon: Number of previous logons to cache (in case domain controller is not availa...	10 logons
Interactive logon: Prompt user to change password before expiration	14 days
Interactive logon: Require Domain Controller authentication to unlock workstation	Disabled

Figure 14.13

The Local Security Policy dialog.

The security settings available for a particular policy may include the following:

- Enable
- Disable
- Not defined

To change a security setting from Enable to Disable or vice versa, double-click the item and select the setting desired. If an item has a "not defined" security setting, you may have a simple Enable or Disable choice, may need to select user groups the policy applies to, or have other options depending on the situation.

Although many of the options provided are intended primarily for enterprise or large network use, some of the options could also be useful for small network or individual users:

- Devices: Prevent users from installing printer drivers—Consider enabling this option if you're worried about somebody smuggling in an unauthorized printer or virtual printer or switching to a different printer driver than the version already installed.
- Shutdown: Clear virtual memory pagefile—Enabling this option, although it slows down system shutdown, could be useful in helping to secure a system that is running sensitive transactions.

- User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode—Switching this option (available in Ultimate and Enterprise editions only) to Elevate Without Prompting stops UAC from displaying those annoying "click to continue" dialog boxes when an administrator account is running while preserving UAC restrictions on standard accounts.

Using BitLocker

Microsoft is fighting back against the current epidemic of laptop thefts and the threat they pose to financial and personal identities with BitLocker, a full-disk encryption feature available in Enterprise and Ultimate editions. BitLocker prevents anyone who doesn't have the proper credentials from starting a BitLocker-encrypted system or from accessing a BitLocker-encrypted drive, even if it's moved to another system.

To set up BitLocker with Windows Vista Ultimate edition, download and run the free BitLocker and EFS Enhancements tool with Windows Update (it's a Vista Ultimate Extra).

Officially, BitLocker is designed for systems that contain a Trusted Platform Module (TPM) chip supporting TPM 1.2, but it can also be used on systems lacking TPM support.

BitLocker stores encryption code on an active 1.5GB partition, and encrypts the remainder of the system drive. The credentials needed to get access to the encrypted partition can be stored in the TPM or a USB flash drive. When you boot a BitLocker-protected system, you are prompted to enter the appropriate PIN number or insert the USB flash drive containing BitLocker credentials. During the encryption process, you are prompted to create a printout and a backup disk containing BitLocker credentials that can be used to get access to the drive if the PIN number or USB flash drive is lost or not available.

So, how does BitLocker do its magic? BitLocker encrypts the drive with a full volume encryption key using AES encryption, and then encrypting that key with a volume master key, also using AES encryption. Basically, you have one lock that protects the other lock. In normal mode, the volume master key is unlocked by the USB key credentials and/or the PIN number. In recovery mode, the recovery password unlocks the volume master key. Then, the volume master key unlocks the full volume encryption key so you can use Windows.

To learn more about the process of setting up BitLocker, see the Microsoft TechNet article "Windows BitLocker Drive Encryption Step-by-Step Guide" for details.

Best and Worst Security Practices

To help keep your system secure, follow the suggestions and reminders in the following sections. Keep reading, and keep your system protected!

Best Security Practices

NOTE

For more information about using EFS to protect your data, see Chapter 34 of *Special Edition Using Windows Vista* by Robert Cowart and Brian Knittel (Que Publishing, 2007).

WARNING

If you have users with different access levels and you find suspicious activity, don't assume that the user listed is necessarily the one who is goofing off or digging around in the trash heaps of cyberspace. As Kevin Mitnick and other hackers have demonstrated over the years, "social engineering" to trick users out of their passwords is alive and well. Change passwords to keep honest users out of trouble and make hackers work harder to cause trouble.

- If you use Vista Ultimate, Enterprise, or Business editions, you can use the encrypted file system (EFS) to encrypt files or folders on any drive that uses NTFS—EFS is enabled through the Advanced Attributes dialog of a file or folder's properties sheet. When a file or folder is encrypted with EFS, it can be opened only by the original user or by another user specifically designated by the original user. To convert drives using other file systems to NTFS, use the command-line Convert.exe program.
- For your own peace of mind, be sure to discuss how User Account Control (UAC) works with standard users—Demonstrate how UAC pops up, and, to avoid having to run to the computer every time a standard user needs to make a change that's verboten, go through the user's setup and make any changes the user can't perform without an administrator password.
- Use passwords for every administrator account—An administrator account without a password is like an unlocked door.
- Use passwords for standard accounts—If you use parental controls for children with different access levels, make sure each child has his or her own account and password, and make sure big brother doesn't bully little sister (or vice versa!) into giving up his or her password.
- Check activity reports—Be sure to view activity reports frequently, especially if the computer isn't located in a high-traffic area. If you discover that some of the kids are going to sites they shouldn't, block those sites.

Security Practices to Avoid

- Don't post passwords—As you've seen earlier in this chapter, the cornerstone of Windows Vista's improved security is user account types. If you have standard users, avoid the temptation to stick the administrator password to the monitor (save those sticky notes for reminders of what to pick up on the way home from the office!). Provide the password yourself, in person, if a standard user needs to perform a task only administrators can perform.
- Don't encrypt anything without backing up your keys—Whether you're using BitLocker, EFS, or a third-party encryption solution, make sure you back up your security keys (certificates) using the appropriate methods recommended by the vendor. If your security keys are corrupted and you have no working backups, good-bye, data, good-bye!

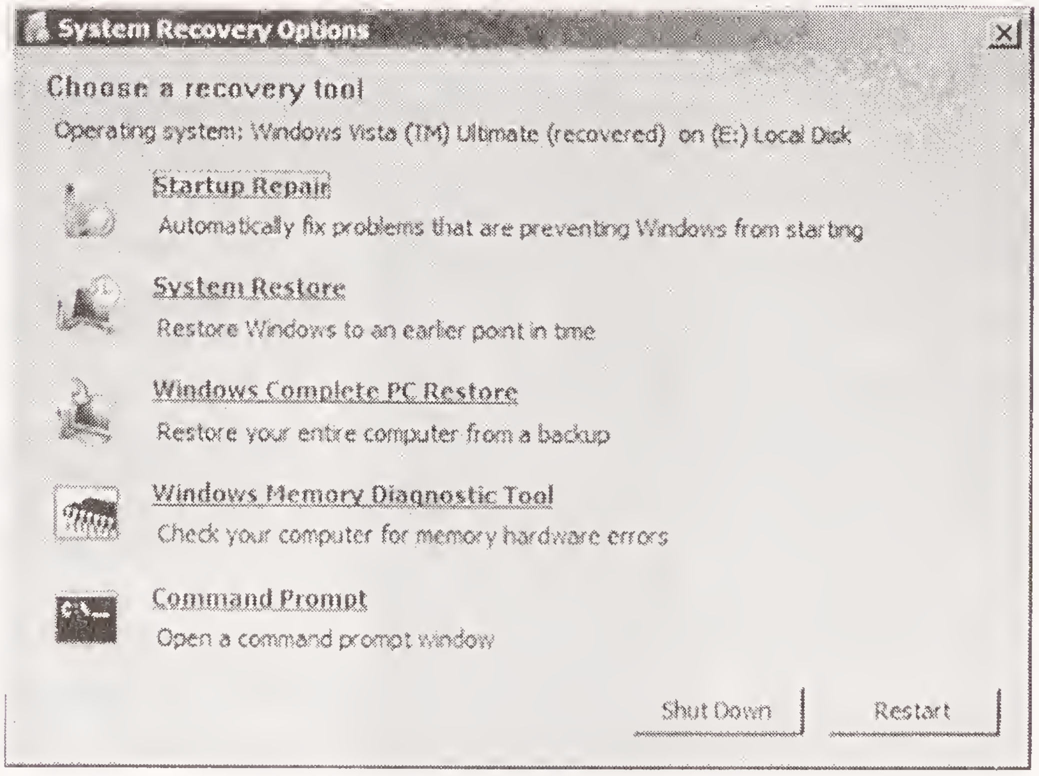
Chapter Fifteen

Troubleshooting and Maintaining Windows Vista

IN THIS CHAPTER

- How Windows Vista Makes Maintenance and Troubleshooting Easier
- Using Windows Update and Microsoft Update
- Disk Maintenance
- Using Task Scheduler
- System Diagnostics
- Using the Windows Vista Recovery Environment
- Troubleshooting and Maintenance Best Practices

How Windows Vista Makes Maintenance and Troubleshooting Easier



Choose a recovery tool

Operating system: Windows Vista (TM) Ultimate (recovered) on (E:) Local Disk

Startup Repair
Automatically fix problems that are preventing Windows from starting

System Restore
Restore Windows to an earlier point in time

Windows Complete PC Restore
Restore your entire computer from a backup

Windows Memory Diagnostic Tool
Check your computer for memory hardware errors

Command Prompt
Open a command prompt window

There are two reasons to read this chapter (aside from the fact that everything I write is compelling, including my grocery list):

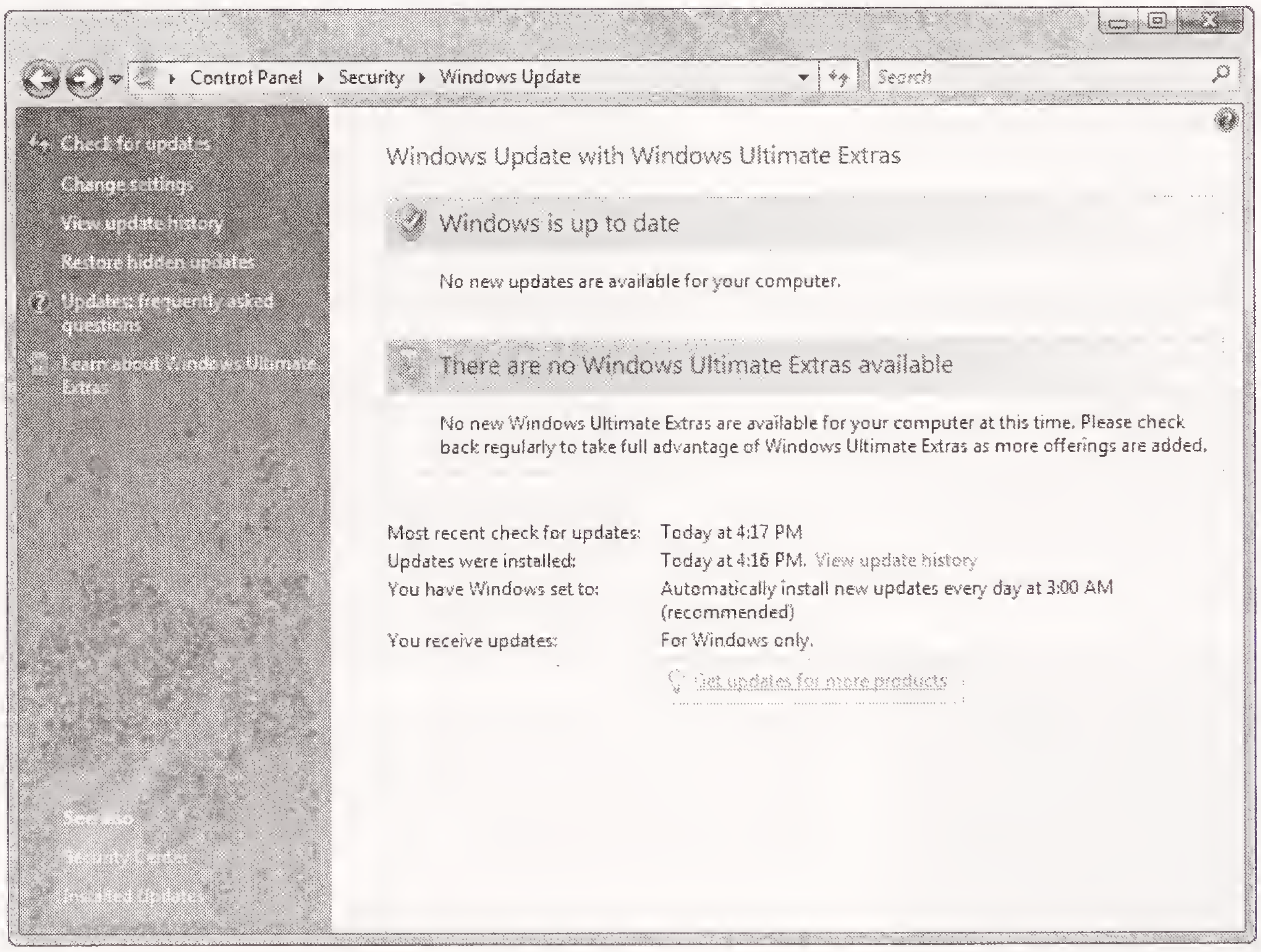
- You're having problems with Windows Vista.
- You're trying to make sure you *won't* have problems with Windows Vista.

Either way, you've come to the right place! In this chapter, I'll show you how to use the new and improved maintenance features in Windows Vista to keep your computer from rolling over and playing dead in the first place. And, if you're already looking at a system that won't start, don't panic (even if you don't have your towel): I'll also show you how to use Windows Vista's unparalleled capability to recover from serious problems.

Using Windows Update and Microsoft Update

Your first step in making sure that Windows Vista keeps working is to make sure that Windows Update is working for you. Although Windows Update's been around since Windows 98, the Vista version has gone through a makeover to make it better and more powerful.

Although you can access Windows Update through Control Panel's System and Maintenance or Security categories, it also shows up in the Start menu. In Windows Vista, Windows Update is no longer browser-based, so you can see your system's current update status even without connecting to the Internet. Figure 15.1 shows a typical system that is configured to perform updates automatically.


Control Panel ▸ Security ▸ Windows Update
Search
Check for updates
Change settings
View update history
Restore hidden updates
Updates: frequently asked questions
Learn about Windows Ultimate Extras
See also
Security Center
Installed Updates

Windows Update with Windows Ultimate Extras

Windows is up to date

No new updates are available for your computer.

There are no Windows Ultimate Extras available

No new Windows Ultimate Extras are available for your computer at this time. Please check back regularly to take full advantage of Windows Ultimate Extras as more offerings are added.

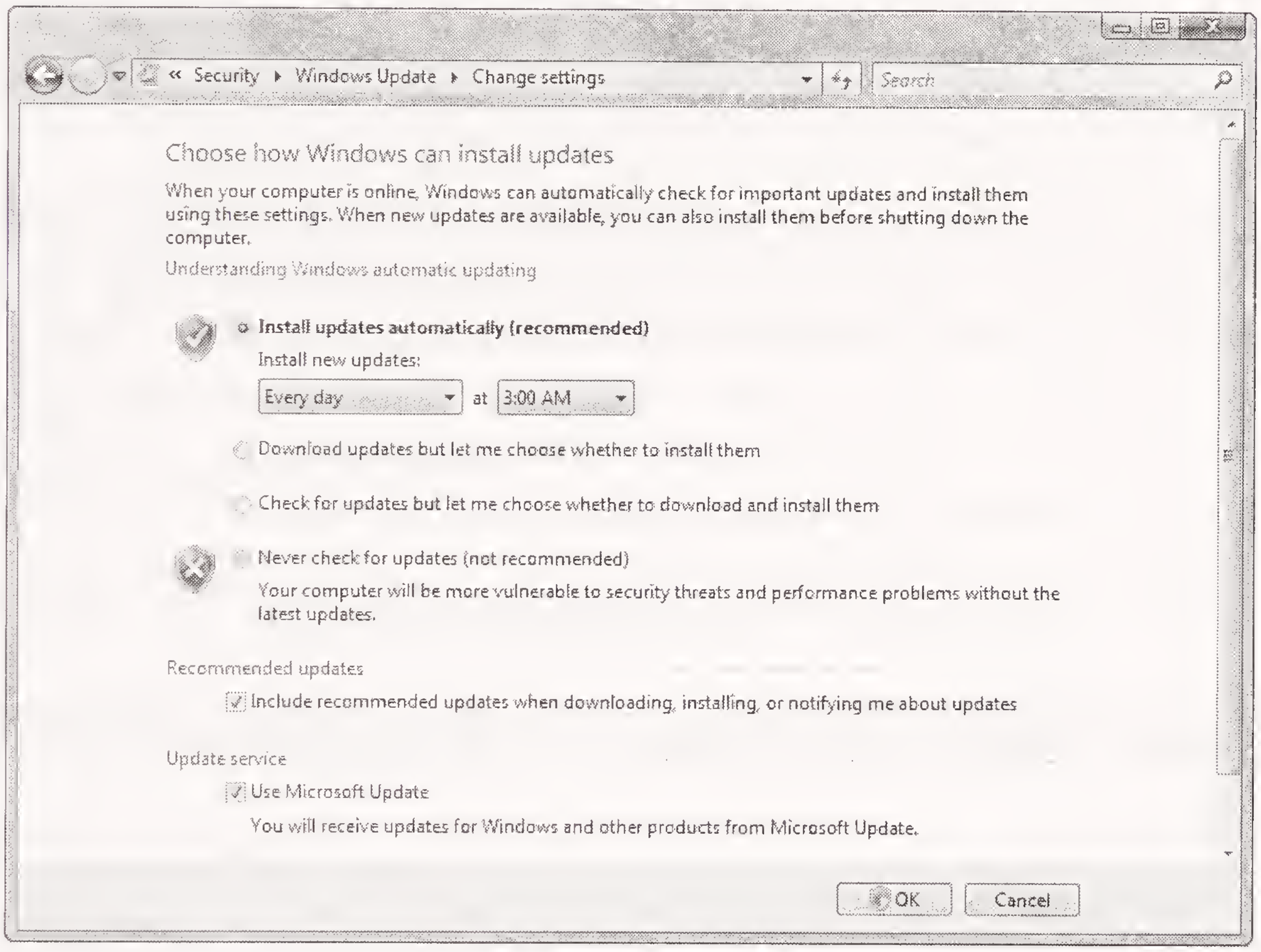
Most recent check for updates: Today at 4:17 PM
Updates were installed: Today at 4:16 PM. View update history
You have Windows set to: Automatically install new updates every day at 3:00 AM (recommended)
You receive updates: For Windows only.

Get updates for more products

Figure 15.1

Windows Vista's Windows Update main dialog. This system is running Windows Vista Ultimate.

By default, Windows Update downloads and installs updates automatically. Depending upon the update, it is sometimes necessary for Windows Vista to shut down and restart to complete an update. The default setting can be a problem if you use remote access to connect to a home or office computer and you don't want your remote system offline because of an automatic shutdown and restart after an update, or if you share folders or printers with other users. To see or adjust settings, click Change Settings in the Tasks panel to display the dialog shown in Figure 15.2.



Choose how Windows can install updates

When your computer is online, Windows can automatically check for important updates and install them using these settings. When new updates are available, you can also install them before shutting down the computer.

Understanding Windows automatic updating

● Install updates automatically (recommended)

Install new updates:

Every day at 3:00 AM

○ Download updates but let me choose whether to install them

○ Check for updates but let me choose whether to download and install them

○ Never check for updates (not recommended)

Your computer will be more vulnerable to security threats and performance problems without the latest updates.

Recommended updates

☑ Include recommended updates when downloading, installing, or notifying me about updates

Update service

☑ Use Microsoft Update

You will receive updates for Windows and other products from Microsoft Update.

Figure 15.2

Use this dialog to see (or change) Windows Update's download and installation settings.

No matter how Windows Update is configured, you can check for updates whenever you want: Click Check for Updates in the Tasks pane or the main pane to start the process. If updates are available, they are displayed in the View Available Updates dialog.

Windows Vista uses the term "Important" to refer to security updates, "Recommended" to refer to other types of updates, and "Optional" to refer to driver updates. By default, all updates are selected. To cancel installation of a particular update, clear the check box.

NOTE

If you have Windows Vista Ultimate Edition, you can also download Ultimate Extras through Windows Update. The main Windows Update dialog lets you know whether Ultimate Extras are available. Click the link provided to download, install, and enjoy them.

TIP

If you select one of the options that permit manual installation of updates from Windows Update, you can skip updates that don't seem useful or may not pertain to your system. Updates that you don't install can be hidden.

If you hide updates and realize later that you need to install the update, click Restore Hidden Updates from the Tasks pane in Figure 15.1 and choose the update(s) you want to restore. Click the Restore button, and the updates are back on the list of updates you can install.

After making your selection, click Install. Each update is downloaded and then installed. To cancel downloading, click Stop Download.

Welcome to Microsoft Update

Microsoft figures that Windows Vista might not be the only Microsoft product on your desktop, and many times, they're right! No wonder Windows Update can do more than update Windows. If you click the Get Updates for More Products button shown in Figure 15.1, you can run Windows Update's sibling, Microsoft Update. Microsoft Update provides automatic update features for MSN, Microsoft Office, and Windows Defender. If you work with Microsoft's server-side apps, Microsoft Update also works with Windows Server 2003, SQL Server, Exchange Server, Visual Studio, Internet Security and Acceleration Server, and Data Protection Manager.

When you start Microsoft Update, Internet Explorer opens the Microsoft Update web page. If this is your first time using Microsoft Update on this computer, click I Accept the Terms of Use and Install to continue. Click Continue if prompted by UAC to permit Microsoft to install Microsoft Update software on your system. Microsoft Update checks for updates to your programs and displays a list of updates you can select from. The next time you run Windows Update from Control Panel, it indicates that you receive updates for Windows and other products.

Discovering What Windows Update Has Updated

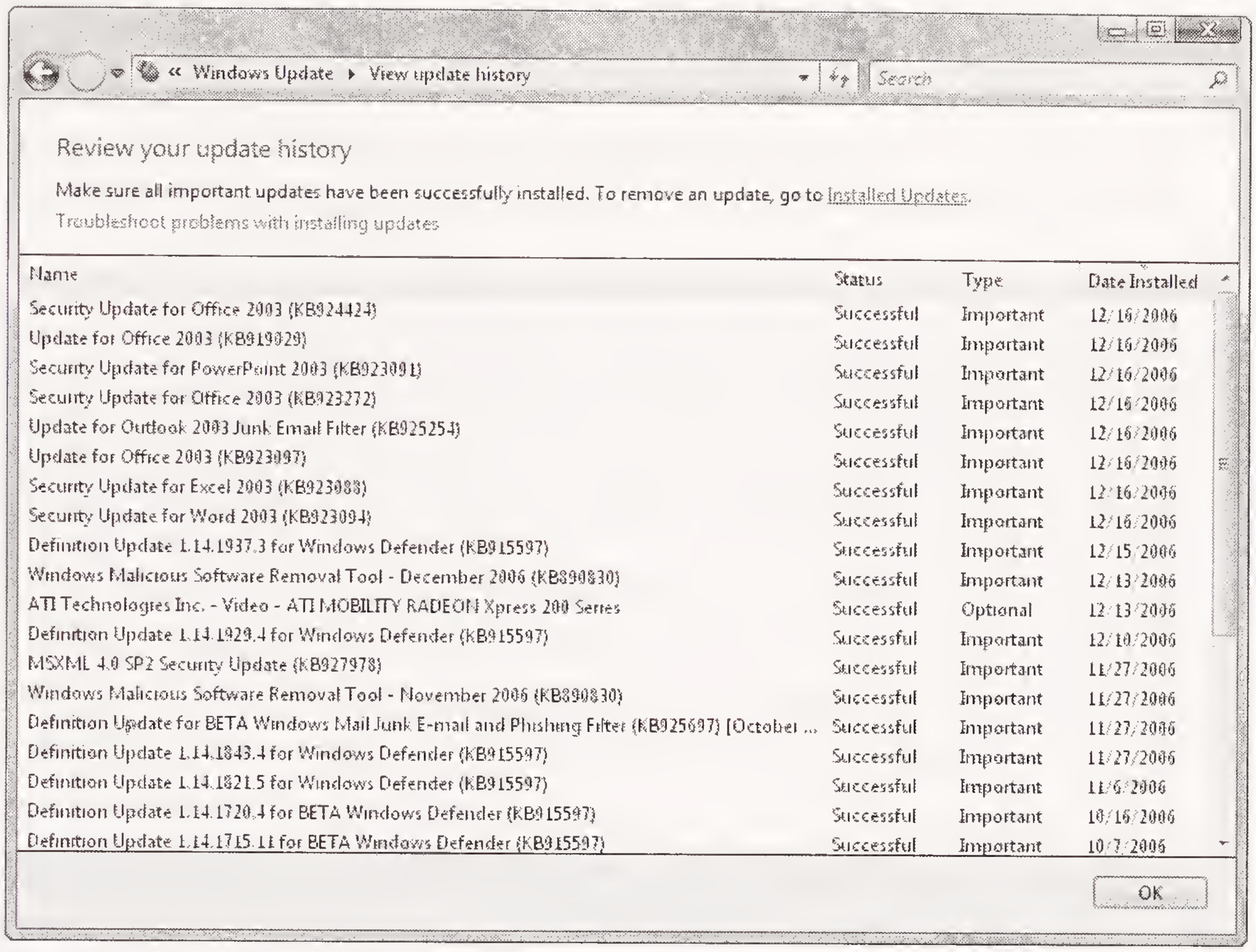
To find out exactly what Windows Update has done for (or to) Windows Vista, click View Update History from the Tasks pane. Updates to Windows Vista, integrated utilities such as Windows Defender, and driver updates are listed. If you enabled Microsoft Update, updates to Microsoft Office and other supported products are also listed. See Figure 15.3 for a typical example.

If you need to remove an update, follow the Installed Updates link to see the Programs and Features listing of updates to Microsoft Windows or other Microsoft products (such as Microsoft Office). To remove an update, select it and click Uninstall or Change.

Feature Rating: ***Windows Update***

TIP

If an update from Windows Update prevents your system from restarting, keep in mind that you can always use the Windows Vista Recovery Environment to run System Restore and get things back to normal. Select the most recent restore point before the update.



Review your update history

Make sure all important updates have been successfully installed. To remove an update, go to Installed Updates.

Troubleshoot problems with installing updates

Name	Status	Type	Date Installed
Security Update for Office 2003 (KB924424)	Successful	Important	12/16/2006
Update for Office 2003 (KB919029)	Successful	Important	12/16/2006
Security Update for PowerPoint 2003 (KB923091)	Successful	Important	12/16/2006
Security Update for Office 2003 (KB923272)	Successful	Important	12/16/2006
Update for Outlook 2003 Junk Email Filter (KB925254)	Successful	Important	12/16/2006
Update for Office 2003 (KB923097)	Successful	Important	12/16/2006
Security Update for Excel 2003 (KB923088)	Successful	Important	12/16/2006
Security Update for Word 2003 (KB923094)	Successful	Important	12/16/2006
Definition Update 1.14.1937.3 for Windows Defender (KB915597)	Successful	Important	12/15/2006
Windows Malicious Software Removal Tool - December 2006 (KB890830)	Successful	Important	12/13/2006
ATI Technologies Inc. - Video - ATI MOBILITY RADEON Xpress 200 Series	Successful	Optional	12/13/2006
Definition Update 1.14.1929.4 for Windows Defender (KB915597)	Successful	Important	12/10/2006
MSXML 4.0 SP2 Security Update (KB927978)	Successful	Important	11/27/2006
Windows Malicious Software Removal Tool - November 2006 (KB890830)	Successful	Important	11/27/2006
Definition Update for BETA Windows Mail Junk E-mail and Phishing Filter (KB925697) [October ...	Successful	Important	11/27/2006
Definition Update 1.14.1843.4 for Windows Defender (KB915597)	Successful	Important	11/27/2006
Definition Update 1.14.1821.5 for Windows Defender (KB915597)	Successful	Important	11/6/2006
Definition Update 1.14.1720.4 for BETA Windows Defender (KB915597)	Successful	Important	10/16/2006
Definition Update 1.14.1715.11 for BETA Windows Defender (KB915597)	Successful	Important	10/7/2006

Figure 15.3

Viewing installed updates.

Disk Maintenance

A healthy disk drive is essential to Windows operations, and Windows Vista provides the same trio of disk drive tools found in Windows XP:

- Error-checking
- Defrag
- Disk cleanup

However, as you ought to expect by now, Windows Vista's versions of these venerable tools have gone through some significant updates. To find out what's changed, and how the changes make your computing life easier, keep reading.

Windows Vista's disk tools, as with older Windows versions, are run from the properties sheet of the drive you want to test. Right-click the drive, and select Properties to get started.

Using Error-checking

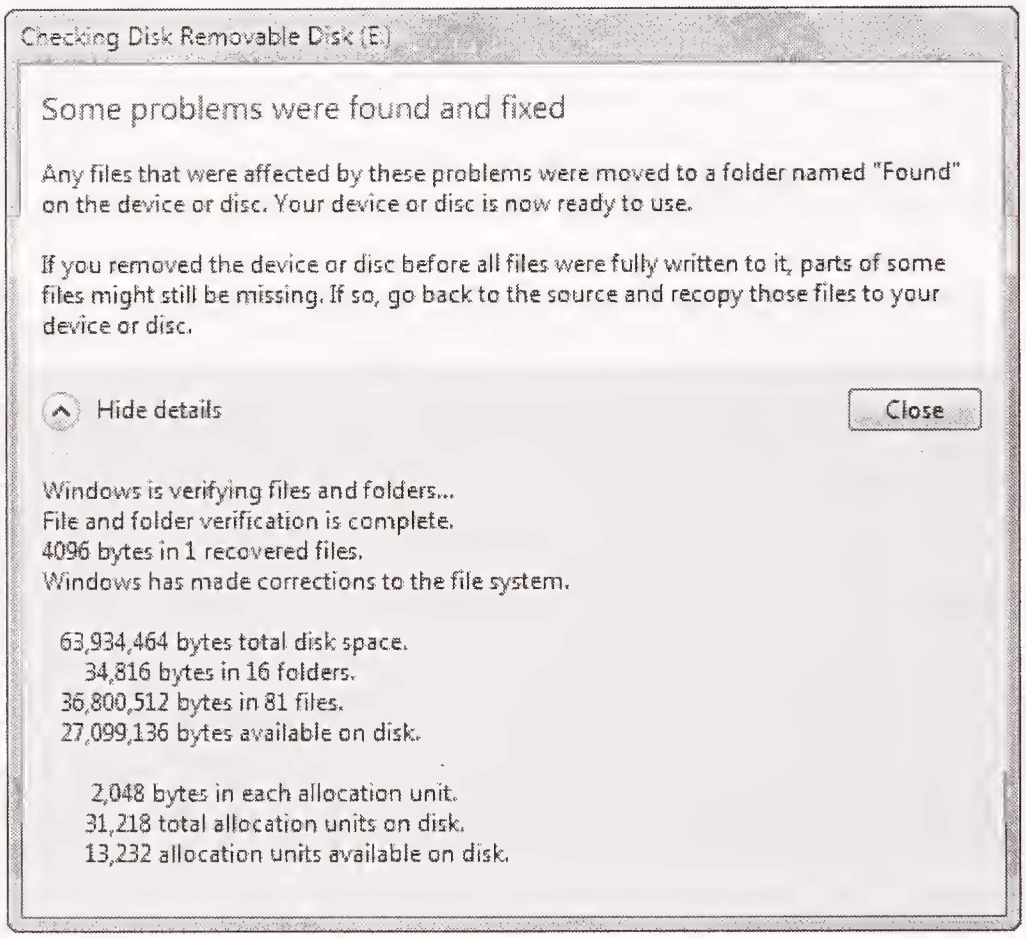
The first disk tool you should use is error-checking, which is located at the top of the Tools tab. This is no coincidence. You don't want to relocate files from working portions of a hard disk to hard disk locations that don't work properly. Similarly, it can be difficult to clean up unwanted files that can't be accessed properly. Thus, error-checking is job one!

In line with Microsoft's efforts to make Windows Vista a more reliable operating system than Windows XP, Vista's error-checking selects the Automatically Fix File System Errors option for you (although you can clear this option). With this option selected, error-checking will also fix any problems it encounters.

If you are checking a drive other than the system hard disk, error-checking starts immediately when you click Start, and at the end of the process, a completion dialog appears. Click See Details to see what problems were detected. As Figure 15.4 shows, error-checking can find and fix many problems on both hard disks, and, in this example, flash memory cards.

TIP

You probably have better things to do than baby-sit the error-checking process every week or so, so why not use the Scheduled Tasks feature to run it a few hours before you run defragment? This way, you make sure your hard disk is in shape before you shuffle the files around for better performance. You'll find more information on using the Task Scheduler later in this chapter.



Some problems were found and fixed

Any files that were affected by these problems were moved to a folder named "Found" on the device or disc. Your device or disc is now ready to use.

If you removed the device or disc before all files were fully written to it, parts of some files might still be missing. If so, go back to the source and recopy those files to your device or disc.

```
Windows is verifying files and folders...
File and folder verification is complete.
4096 bytes in 1 recovered files.
Windows has made corrections to the file system.

  63,934,464 bytes total disk space.
      34,816 bytes in 16 folders.
  36,800,512 bytes in 81 files.
  27,099,136 bytes available on disk.

       2,048 bytes in each allocation unit.
      31,218 total allocation units on disk.
      13,232 allocation units available on disk.
```

Figure 15.4

Viewing the results of a disk check on a drive with a disk error.

Error-checking also includes an option to scan for and attempt recovery of bad sectors. Enabling this option on a system drive also requires you to schedule disk checking for the next time you restart your system. With any drive, enabling this option means that disk checks may take longer to perform.

Feature Rating: **Error-Checking**

Dealing with Troubled Drives

If you consistently see problems with a particular drive when you run error-checking, put away the hammer and try these solutions:

Flash memory

Move all readable data from the drive or card and reformat the card. Don't use the quick format option (which simply clears the file listing areas of the drive); the full format option will test all areas of the drive.

Hard disk drives

Download the latest drive testing and diagnostics utility for your hard disk from the drive vendor's website. Back up data from the drive before running the utility. Note that most of these utilities run from a bootable floppy disk, although some vendors now supply a bootable ISO CD image because most new systems don't include a floppy disk drive.

When you run the disk utility, perform thorough testing to check the entire drive for errors. Most of these utilities automatically swap spare disk sectors for sectors that don't pass diagnostics testing. Because a file located on a swapped sector might be corrupted, you should back up data and other important files before starting the test process.

Make sure you use the right diagnostics utility version for your hard disk. To see the brand and model number of your drive, click the Hardware tab on your hard disk's properties sheet.

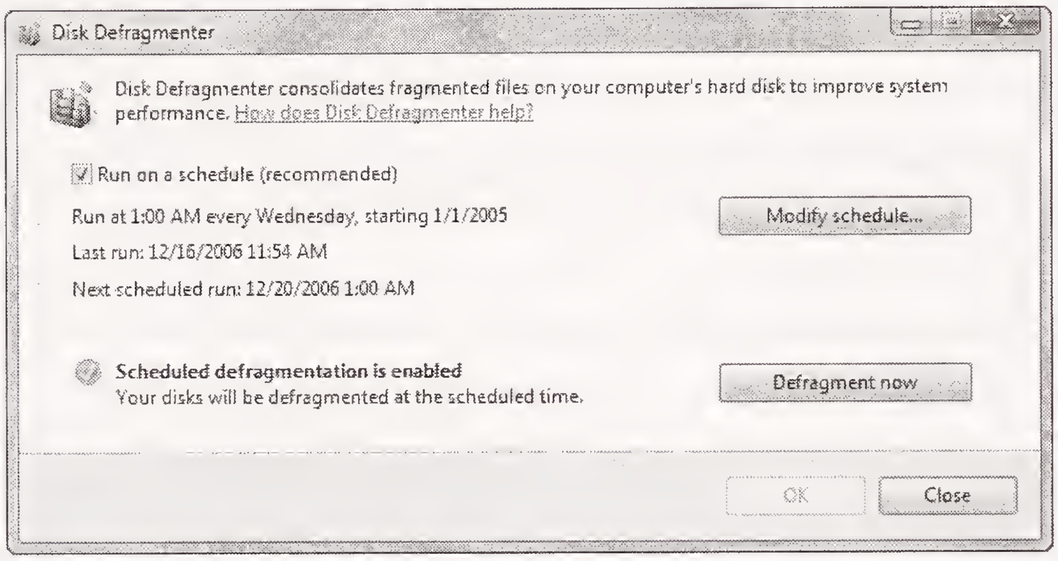
If your hard disk fails diagnostic checks, check with the drive or system manufacturer to determine whether the drive is in warranty, and for repair/replacement procedures.

Using Defragmentation

Disk defragmentation, in which the operating system starts storing files in scattered allocation units (or *clusters*, if you're feeling nostalgic and/or hungry) because there's no longer enough contiguous disk space to store files, continues to be the bane of long-term hard disk use. Even on today's cache-stuffed SATA speed demons, a badly fragmented drive takes longer to store data and longer to read it back than an unfragmented drive.

Microsoft's attitude toward fragmentation in NT-based operating systems was initially to ignore the problem, but both Windows 2000 and Windows XP include a good one (based on Executive Software's Diskeeper), provided you remembered to run it from time to time (you could use Scheduled Tasks to set up operation, but this was an extra step a lot of users never bothered to perform).

To make sure Windows Vista's defragmentation utility is on the job, it now includes an integrated schedule. When you click Defragment Now, Windows Vista actually opens up a scheduler window (see Figure 15.5) that also includes an option to run defragment right away if you prefer.



Disk Defragmenter consolidates fragmented files on your computer's hard disk to improve system performance. How does Disk Defragmenter help?

☑ Run on a schedule (recommended)

Run at 1:00 AM every Wednesday, starting 1/1/2005

Last run: 12/16/2006 11:54 AM

Next scheduled run: 12/20/2006 1:00 AM

Scheduled defragmentation is enabled
Your disks will be defragmented at the scheduled time.

Figure 15.5

The disk defragmenter utility in Windows Vista includes its own scheduler.

The default weekly schedule can be adjusted to daily or monthly, and you can also choose a particular day of the week and time of the day (in one-hour increments).

Feature Rating: ***Disk Defragmenter***

Using Disk Cleanup

If your system drive gets filled up with MP3 downloads, digital photos, temporary Internet files or anything else you've scrounged up, file access and defragmentation slow down (and defragment won't run at all if less than 15% of your hard disk is empty), and programs that need free disk space for temporary scratch files, such as Adobe Photoshop, will run more slowly.

Use Disk Cleanup to discard files you don't need. The Disk Cleanup button is on the drive's General tab, which enables you to see how much space is left on the drive before you click the button to get the cleanup process started.

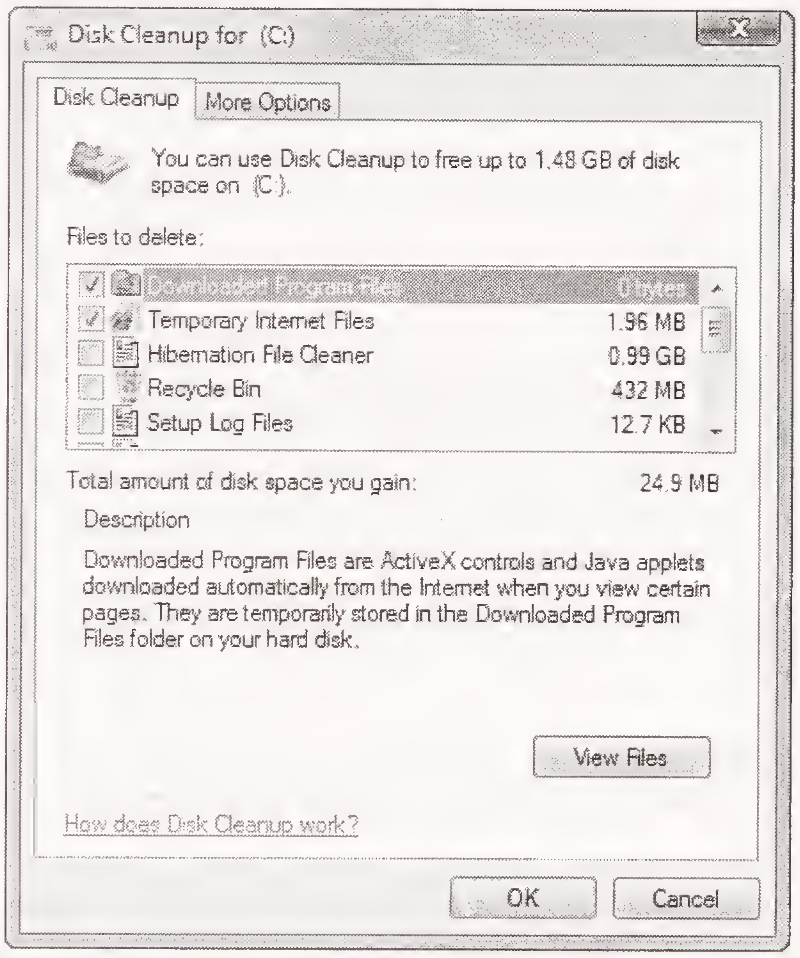
When you click Disk Cleanup, you can choose to work with your own files only or with all users' files. If you select all users' files, UAC pops up, asking for permission before continuing.

You can remove downloaded program files, the hibernation file, error reporting files, and other types of files (see Figure 15.6). You can also empty the recycle bin to free up space.

Click the More Options tab (available only if you select All Users' files) to see options to remove programs you don't use or to delete outdated system restore points (and shadow copies, if you use Ultimate, Enterprise, or Business edition).

NOTE

The General tab shows you the name of the drive (and gives you an easy way to rename it), its file system, and a handy pie chart showing the space in use (magenta) and the free space (blue). You can also configure disk compression (off by default) and indexing (on by default).



You can use Disk Cleanup to free up to 1.48 GB of disk space on (C:).

Files to delete:

☑	Downloaded Program Files	0 bytes
☑	Temporary Internet Files	1.96 MB
☐	Hibernation File Cleaner	0.99 GB
☐	Recycle Bin	432 MB
☐	Setup Log Files	12.7 KB

Total amount of disk space you gain: 24.9 MB

Description

Downloaded Program Files are ActiveX controls and Java applets downloaded automatically from the Internet when you view certain pages. They are temporarily stored in the Downloaded Program Files folder on your hard disk.

Figure 15.6

Preparing to remove unneeded files with Disk Cleanup.

TIP

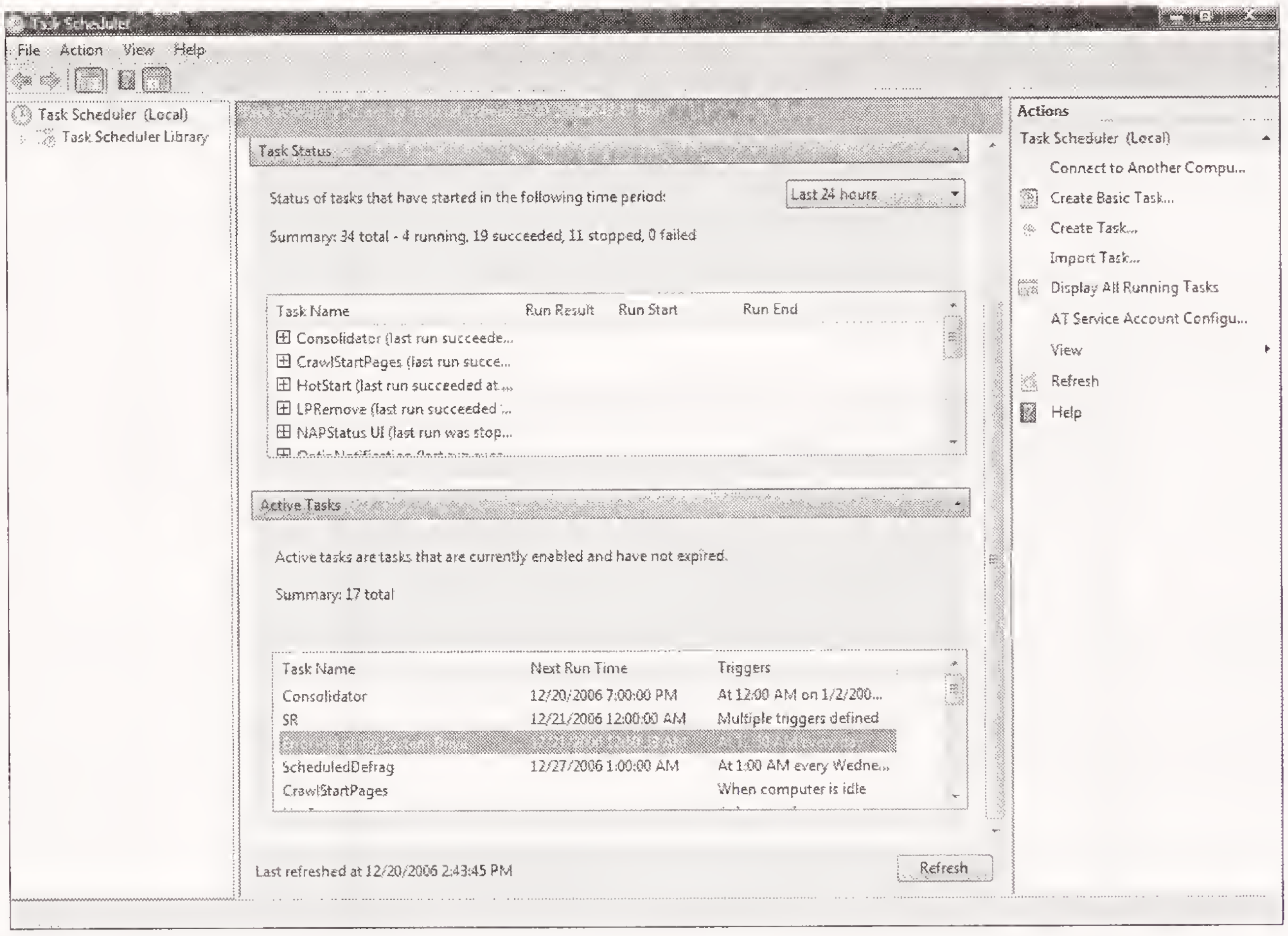
If you want to know what files will be deleted by Disk Cleanup, select a category and click the View Files button (when available) to open an Explorer window listing the files.

Using Task Scheduler

When you open Task Scheduler (see Figure 15.7), you're likely to sit back for a moment and say to yourself, "Whoa...." Even if you've used Scheduled Tasks in previous Windows versions, Windows Vista's version is different. Real different. What's new, different, and (hopefully) better?

Windows Vista's take on Scheduled Tasks is to make it MMC-compliant. As with other utilities using the MMC interface, Task Scheduler has three panes:

- The left pane contains the Task Scheduler library (a collection of existing scheduled tasks). When you create a new task, it is added to the library.
- The center pane opens to a Task Scheduler summary. The summary includes an overview, a review of task status, and a list of active tasks.
- The right pane is the Actions menu. Use this menu to create tasks, import tasks, or change the current view.


Task Scheduler
File
Action
View
Help
Task Scheduler (Local)
Task Scheduler Library
Task Status
Last 24 hours
Active Tasks
Refresh
Actions
Task Scheduler (Local)
Connect to Another Compu...
Create Basic Task...
Create Task...
Import Task...
Display All Running Tasks
AT Service Account Configu...
View
Refresh
Help

Status of tasks that have started in the following time period: Last 24 hours

Summary: 34 total - 4 running, 19 succeeded, 11 stopped, 0 failed

Task Name	Run Result	Run Start	Run End
⊞ Consolidator (last run succeede...			
⊞ CrawlStartPages (last run succe...			
⊞ HotStart (last run succeeded at ...			
⊞ LPRemove (last run succeeded :...			
⊞ NAPStatus UI (last run was stop...			

Active tasks are tasks that are currently enabled and have not expired.

Summary: 17 total

Task Name	Next Run Time	Triggers
Consolidator	12/20/2006 7:00:00 PM	At 12:00 AM on 1/2/200...
SR	12/21/2006 12:00:00 AM	Multiple triggers defined
[illegible]	[illegible]	[illegible]
ScheduledDefrag	12/27/2006 1:00:00 AM	At 1:00 AM every Wedne...
CrawlStartPages		When computer is idle

Last refreshed at 12/20/2006 2:43:45 PM

Figure 15.7

The Task Scheduler in Windows Vista, with the summary window scrolled down to display Active Tasks.

By using the MMC interface and showing users' system tasks, Task Scheduler helps users to avoid creating tasks that would duplicate existing tasks and enables users to edit system tasks.

Task Scheduler can create basic tasks and tasks. What's the difference? When you create a basic task, you use a wizard to create the task. When you create a task, you use the same—more powerful—multitabbed interface used to edit a task to create the task.

TIP

If you're new to creating a task (and with the new interface, a lot of experienced users also fit this description), I recommend using the basic task option. You can always edit the task later to add additional settings.

To create a basic task, click Create Basic Task. To create the task, you need to provide this information when prompted by the wizard:

- Task Name—Enter a name to identify the task (does not need to be the name of the program you are running).
- Description—Describe what the task will do.
- Trigger—You can select from daily, weekly, monthly, one time, startup, login, or when a specific event is logged.
- Action—You can start a program, send an email, or display a message.

After you create a basic task, you can view its settings by opening the Task Scheduler Library in the left pane and selecting the task. To edit the task, right-click it and select Properties. Whether you are viewing the task or editing it, there are six tabs in the Properties sheet:

- General—Specifies the user account running the program and when to run it.
- Triggers—Specifies what starts the task. Click Edit to specify options such as at logon, at startup, on idle, on an event, at task creation or modification, on connect or disconnect, or on workstation lock or unlock.
- Actions—Specifies what program to run, including command-line options.
- Conditions—Specifies idle, power, and network conditions that should enable or prevent the task.
- Settings—Various options such as error-handling, duration, and others.
- History—Displays what happened during previous task runs.

Figure 15.8 shows the properties sheet for a typical task.

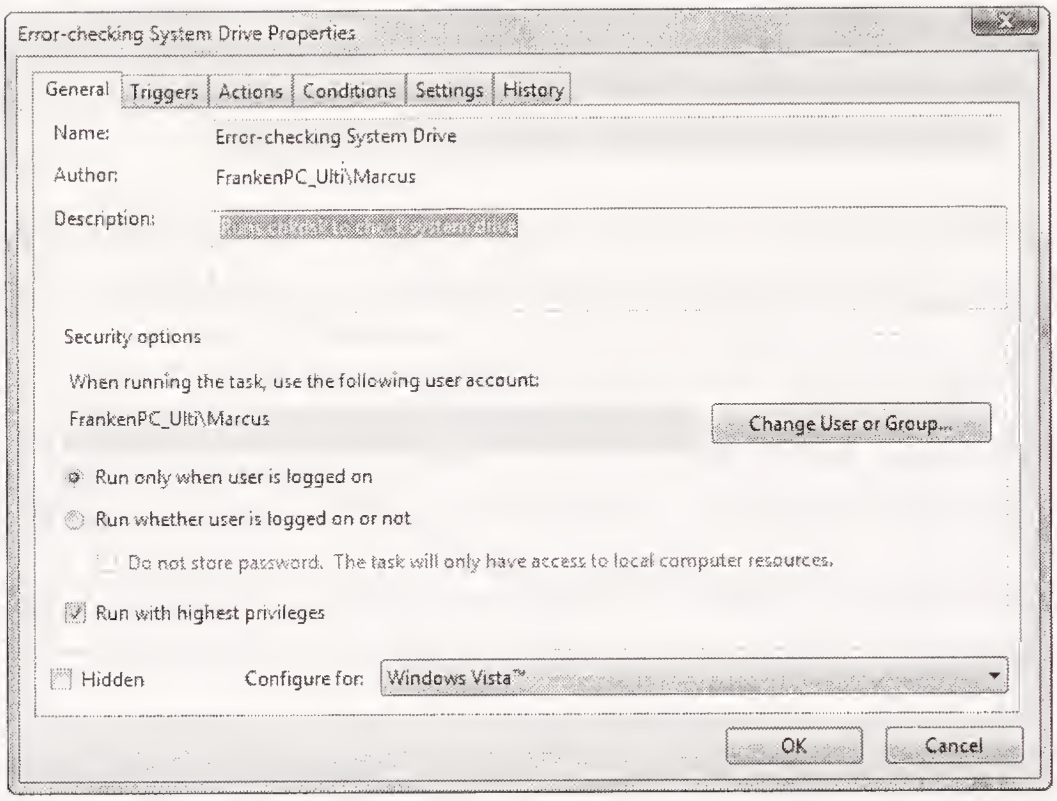
Feature Rating: **Task Scheduler**

NOTE

The Task Scheduler utility is one of several utilities based on the Microsoft Management Console (MMC). However, if you run the MMC itself from the Run menu, you'll find that, like a ratchet wrench without a socket, the MMC doesn't *do* much of anything until you install snap-ins (digital "sockets") to perform various tasks. In Windows Vista Microsoft has grouped together several utilities that use the MMC and automatically perform the installation of the appropriate snap-in when you open the appropriate icon. If only my ratchet wrench would choose the correct-size socket when I used it!

TIP

Some tasks, such as the chkdsk.exe task shown in Figure 15.8, are designed to run from the command prompt. When you open a normal command prompt session, even if you are an administrator, it opens with standard user privileges. However, some programs, such as chkdsk, require administrator-level access. To provide administrator-level access, make sure the Run with Highest Privileges box is checked.



Error-checking System Drive Properties

Name: Error-checking System Drive

Author: FrankenPC_Ulti\Marcus

Description: Runs chkdsk to check system drive

Security options

When running the task, use the following user account:

FrankenPC_Ulti\Marcus

● Run only when user is logged on

○ Run whether user is logged on or not

☐ Do not store password. The task will only have access to local computer resources.

☑ Run with highest privileges

☐ Hidden

Configure for: Windows Vista™

Figure 15.8

A user-created task being edited.

System Diagnostics

Windows Vista aims to be the most reliable, as well as the most fun and most useful version of Windows yet. To make sure Windows Vista meets the reliability expectations of hundreds of millions of Windows users, Microsoft has added a bunch of new and improved system diagnostics tools:

- Memory Diagnostics (NEW)
- Problem Reports and Solutions (NEW)
- MSConfig System Configuration (IMPROVED)
- Device Manager (IMPROVED)

Using Memory Diagnostics

What does Windows want? RAM—lots of it—and, while you're at it, make sure it works! Bad RAM causes Windows crashes (especially if you have a number of programs running in memory), can prevent it from starting, and ruins your computing day.

To find out whether RAM is the cause for a bad Windows Experience, Windows Vista includes the brand-new Windows Memory Diagnostics Tool. You can run it from three different locations:

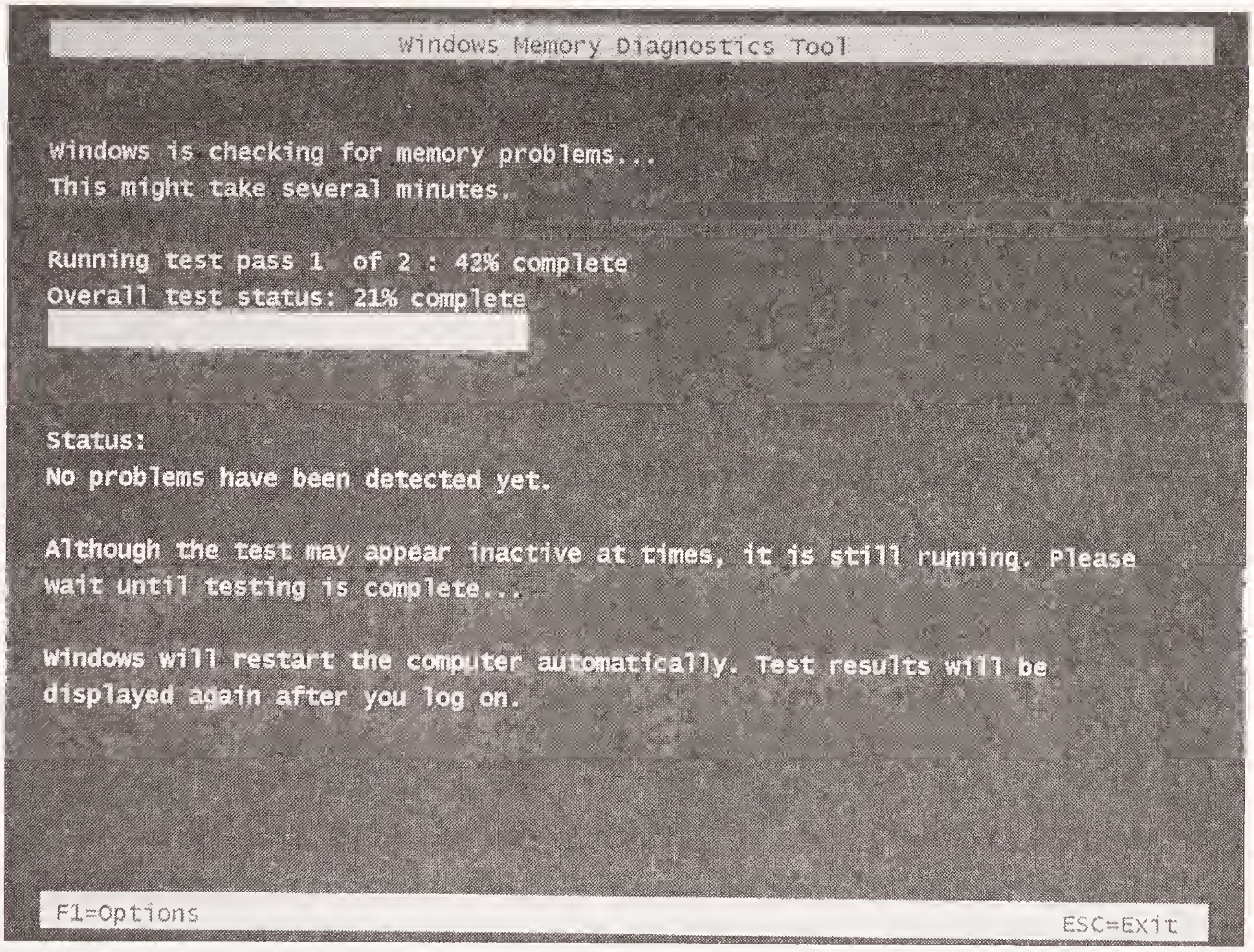
- Select it from the Administrative Tools folder in the Control Panel.
- Press F8 when you start the computer, and select it from the Windows Boot Manager.
- Start your system with the Windows Vista DVD and run it from the System Recovery menu.

Why do you need to restart your system? To ensure that the Windows Memory Diagnostics Tool can check every bit (literally!) of your system's RAM, it needs to run before Windows Vista loads and starts filling up your RAM.

Figure 15.9 shows the Windows Memory Diagnostics Tool in action.

NOTE

When you run the Memory Diagnostics Tool from the Administrative Tools folder, you must restart your system to run it. You can choose to restart your system immediately for testing or to schedule testing the next time you restart your system.



```
Windows Memory Diagnostics Tool

Windows is checking for memory problems...
This might take several minutes.

Running test pass 1  of 2 : 42% complete
Overall test status: 21% complete

Status:
No problems have been detected yet.

Although the test may appear inactive at times, it is still running. Please
wait until testing is complete...

Windows will restart the computer automatically. Test results will be
displayed again after you log on.

F1=Options                                                        ESC=Exit
```

Figure 15.9

The Windows Memory Diagnostics Tool.

For most of us, the default settings work fine. However, if you want to tweak settings, press F1 to display the Options dialog box. The settings you can adjust include the following:

- Test type—The default is Standard. You can also choose Basic (performs fewer tests) or Extended (performs more tests).

- Cache configuration—Default (some test with cache on, some with cache off; doesn't change settings), On (turns on memory cache for all tests), Off (disables memory cache for all tests). I recommend you run tests with the cache off because the cache can interfere with memory testing.
- Number of test passes—You may select from 0–99 (select 0 for infinite test passes; press Esc to cancel).

If there are any problems with memory, Windows Vista reports them during testing and stores a copy where Problem Reports and Solutions can find it. Although the Memory Diagnostics Tool identifies the bad module, naturally, it's up to you to replace it.

TIP

If your system uses ECC memory, disable ECC support in the system BIOS before performing tests if possible. This will help ensure that single-bit errors that ECC corrects automatically can be detected.

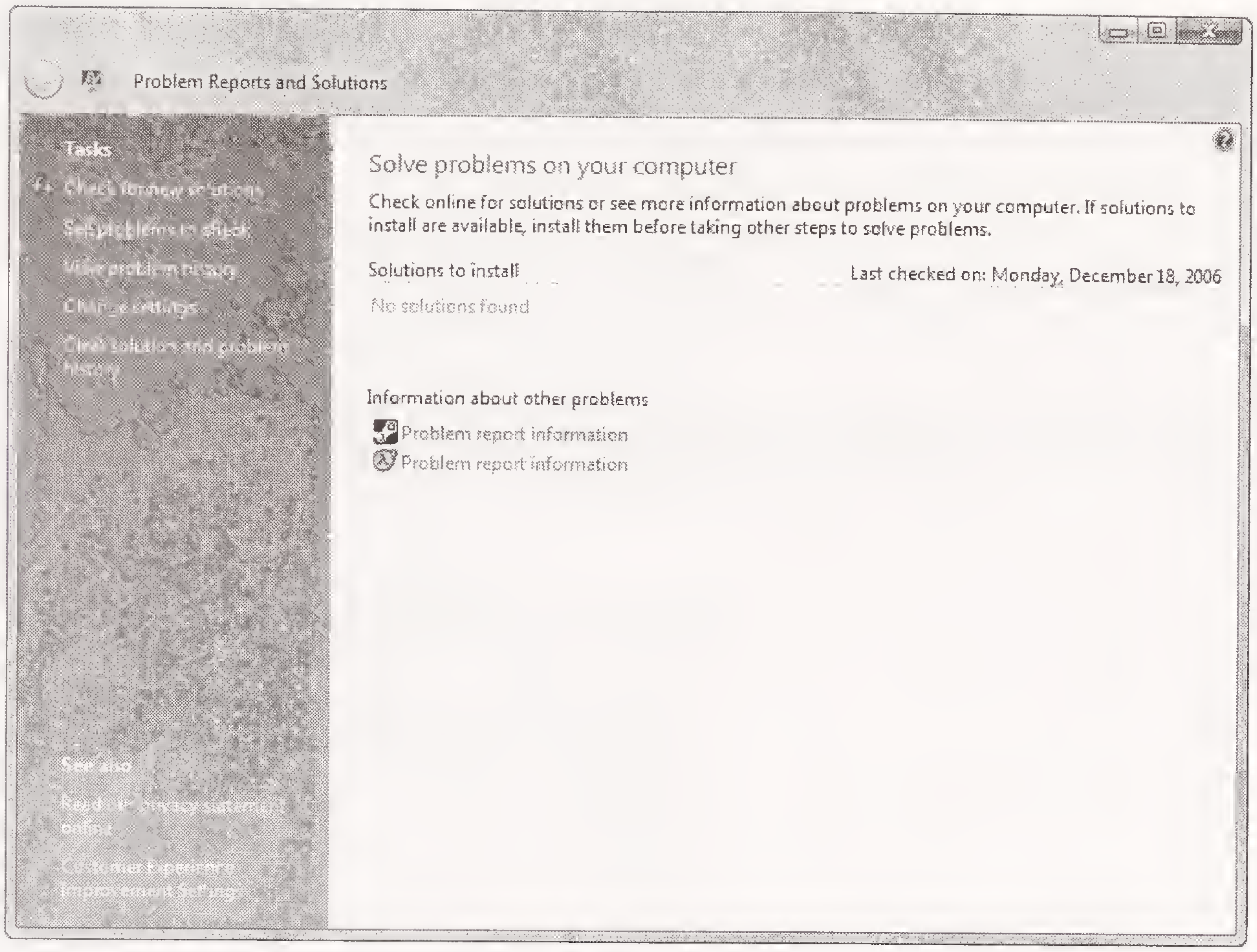
If your system has more than 4GB of RAM, keep in mind that Windows Memory Diagnostics Tool can test only up to 4GB of RAM. To test all the RAM in such a system, remove enough RAM to reduce the total memory size to less than 4GB, run the tool, and then test the remainder of the memory separately.

Using Problem Reports and Solutions

How many times have you looked at a Windows XP crash analysis box, clicked the link to get help, and wondered whether that was all the help you'd ever get? If you're like me, the answer is "a lot"—but the good news is that Windows Vista has finally made the long, long wait for more help with problems pay off with its brand-new Problems Reports and Solutions applet in Control Panel.

When Vista detects a problem, a message appears in the notification area. Click the message, and a report appears onscreen. Follow the link in the report to get a solution (such as updating a program, updating a driver, and so on). However, even if you don't know you had a problem, or Microsoft doesn't have a solution on tap immediately for you, Vista keeps track of problems—and solutions—with its Problem Reports and Solutions applet (see Figure 15.10).

In the main pane, current solutions to install (if any) are listed, along with problems caused by both Microsoft and third-party applications. Although Windows XP reported problems caused by third-party programs, it was a cold day in Hades whenever Microsoft had any help for you in such cases. However, Windows Vista is much better at digging out solutions to both types of problems. Click the links provided to learn what Microsoft recommends.



Problem Reports and Solutions
Tasks
Check for new solutions
See problems to check
View problem history
Change settings
Clear solution and problem history
See also
Read our privacy statement online
Customer Experience Improvement Settings
Information about other problems
Problem report information
Problem report information

Solve problems on your computer

Check online for solutions or see more information about problems on your computer. If solutions to install are available, install them before taking other steps to solve problems.

Solutions to install

Last checked on: Monday, December 18, 2006

No solutions found

Figure 15.10

The new Problem Reports and Solutions tool.

System Configuration (MSConfig)

Who knows what villainy lurks behind the Windows Vista startup animation? Don't ask the Shadow—he's deader than vacuum-tube radio! Ask MSConfig, the Microsoft System Configuration utility, instead. MSConfig's a veritable Swiss Army Knife of startup fine-tuning, giving you the ability to disable or enable startup programs, adjust boot options, enable or disable startup services, and run various reporting and diagnostic tools.

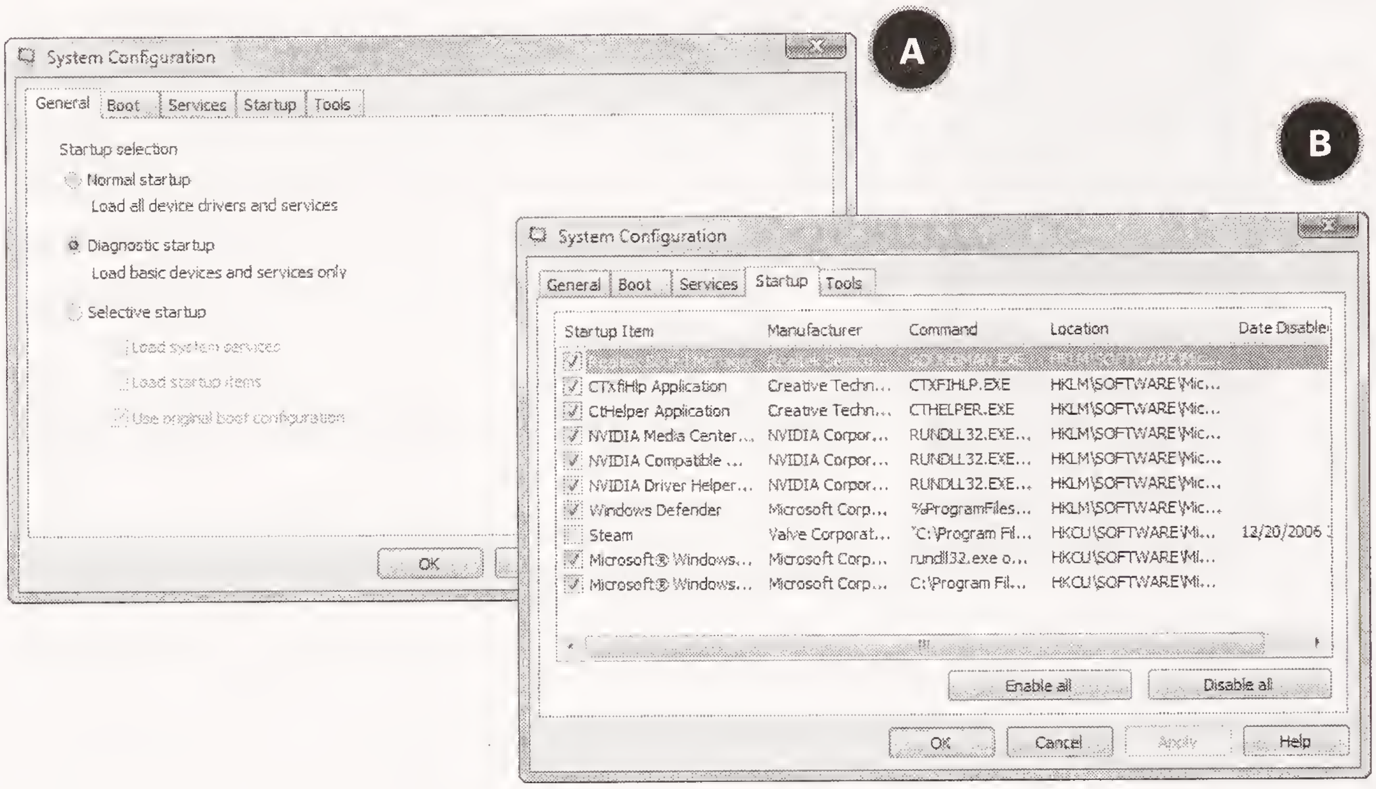
The easiest way to run System Configuration is from its Administrative Tools shortcut, but you can also click Start, All Programs, Accessories, and Run; type `msconfig`; and click OK to get started.

You can use MSConfig to tweak your startup configuration in several ways. For example, if you're suspicious that something running at startup is causing problems, you can select Selective Startup from the General tab and clear the check box for Load Startup Items (see Figure 15.11 A) to prevent loading any startup programs the next time you reboot. Similarly, clearing the Load System Services check box prevents system services such as printing or wireless configuration from loading the next time you reboot.

However, these all-or-nothing startup options are just the first step in solving startup problems. If you find that your system works properly when you disable startup programs, but you miss the convenience of starting programs automatically, you can rerun MSConfig, reselect Normal Startup from the General tab, and click the Startup tab (see Figure 15.11 B) to see the specific startup programs your system uses.

A Preparing to restart in Safe Mode (Diagnostic startup) with MSConfig.

B The Startup tab of System Configuration with one startup program disabled.



Startup selection

○ Normal startup
Load all device drivers and services

● Diagnostic startup
Load basic devices and services only

○ Selective startup
☐ Load system services
☐ Load startup items
☑ Use original boot configuration

	Startup Item	Manufacturer	Command	Location	Date Disable
☑	[illegible]	[illegible]	[illegible]	[illegible]	
☑	CTxfiHlp Application	Creative Techn...	CTXFIHLP.EXE	HKLM\SOFTWARE\Mic...	
☑	CtHelper Application	Creative Techn...	CTHELPER.EXE	HKLM\SOFTWARE\Mic...	
☑	NVIDIA Media Center...	NVIDIA Corpor...	RUNDLL32.EXE...	HKLM\SOFTWARE\Mic...	
☑	NVIDIA Compatible ...	NVIDIA Corpor...	RUNDLL32.EXE...	HKLM\SOFTWARE\Mic...	
☑	NVIDIA Driver Helper...	NVIDIA Corpor...	RUNDLL32.EXE...	HKLM\SOFTWARE\Mic...	
☑	Windows Defender	Microsoft Corp...	%ProgramFiles...	HKLM\SOFTWARE\Mic...	
☐	Steam	Valve Corporat...	"C:\Program Fil...	HKCU\SOFTWARE\Mi...	12/20/2006
☑	Microsoft® Windows...	Microsoft Corp...	rundll32.exe o...	HKCU\SOFTWARE\Mi...	
☑	Microsoft® Windows...	Microsoft Corp...	C:\Program Fil...	HKCU\SOFTWARE\Mi...	

Figure 15.11

Using MSConfig.

Clear check marks to disable startup programs. If you disable a startup program, this tab shows you when you disabled it, making it easy to determine whether your sick system starts recovering when you disable a particular program.

Diagnostic startup (refer to Figure 15.11 A) is MSConfig's way of enabling you to run Safe Mode. Selecting this option does the same job as selecting Safe Mode from the startup options dialog displayed when you press F8 when booting the computer. Starting your system in Safe Mode loads basic services only, so some of your favorite features won't work, and your system will run in 640×480 resolution. If your system runs in Safe Mode, but not normally, you know there's a problem somewhere in your mix of startup programs and normal services.

Similarly, if you find that disabling all system services straightens out a delinquent system, you should reenable them using the General tab, open the Services tab and try disabling a service, and then restart the system.

Patience and Persistence Pays in Stopping Startup Woes

If you're reading this chapter because your system startup process is seriously screwed up, stop and think for a moment before you start panicking (towel optional). Ask yourself if anything has changed since the last time your system worked.

When you're wondering what to disable on the Startup or Services tab, look for programs or services installed recently. These will normally be third-party items. Because on most systems there are more services running at startup than startup programs, you can simplify the search by clicking the Hide All Microsoft Services check box; only third-party services will then be displayed.

To find the exact problem with system startup, disable one (only one!) item in either the Startup or Services tab and restart your system. MSConfig reminds you when you reboot that you've disabled something, so you won't forget. If the problem goes away, you're a genius! Otherwise, chalk it up to experience, reenable the first item, disable the next item, and repeat. Continue until you've found the problem.

After you discover which startup program or system service is the culprit, you can leave it disabled or update it with a newer version (if available).

Tweaking Boot Options

The Boot Options section of the Boot tab enables you to choose many of the same options available when you press F8 at system startup and display the Advanced boot configuration menu without the bother, as well as providing additional advanced boot options.

➪ For details, see "Advanced Boot Options Menu," p. 371, this chapter.

If you dual-boot with an older version of Windows, you can also use the Boot tab to specify which version to run, specify how long to wait when the Advanced Boot Options dialog is displayed when you start the system, and determine whether to make the Boot Options settings permanent.

Click the Advanced button on the Boot menu to open a BOOT Advanced Options dialog. This dialog enables you specify the number of processors, lock PCI settings, detect the HAL used by the system, or configure a serial, USB, or 1394 port for remote debugging. It's serious troubleshooting for serious problems.

But Wait, There's More! MSConfig's Tools Tab

MSConfig's Tools tab provides easy access to more than a dozen reporting and diagnostics tools found in the \Windows\System32 folder:

- About Windows—winver.exe
- System Information—msinfo32.exe
- Remote Assistance—msra.exe
- System Restore—restrui.exe
- Computer Management—compmgmt.msc
- Event Viewer—eventvwr.exe
- Programs—appwiz.cpl
- Security Center—wscui.cpl
- System Properties—*
- Internet Options—netcpl.cpl
- Internet Protocol Configuration—*
- Performance Monitor—perfmon.exe
- Task Manager—taskmgr.exe
- Disable UAC (User Account Control)—*
- Enable UAC—*
- Command Prompt—cmd.exe
- Registry Editor—regedt32.exe

*Select this tool to see the command-line options needed to run it from the Windows GUI.

To start a tool, select it and click Launch.

Using Device Manager

Ever since the Windows Device Manager was introduced, it has been one of the most important tools for troubleshooting a balky installation. Even though today's systems use Plug-and-Play hardware and require less babysitting than in the past, Device Manager is still useful—so useful, in fact, that you can run it from any of the following places:

- System properties sheet
- Control Panel Classic View icon
- Computer Management node

No matter how you start it, Control Panel displays and configures all the hardware built in to or connected to your computer. When you open the Device Manager, it displays the device categories found in your computer (computer, disk drives, display, keyboards, and so on), as shown in Figure 15.12.

Advanced Boot Options Menu

If your system gets so fouled up you can't start it normally, you may be able to start it by using one of the Advanced Boot Options menu selections. To display these options, follow one of the options shown:

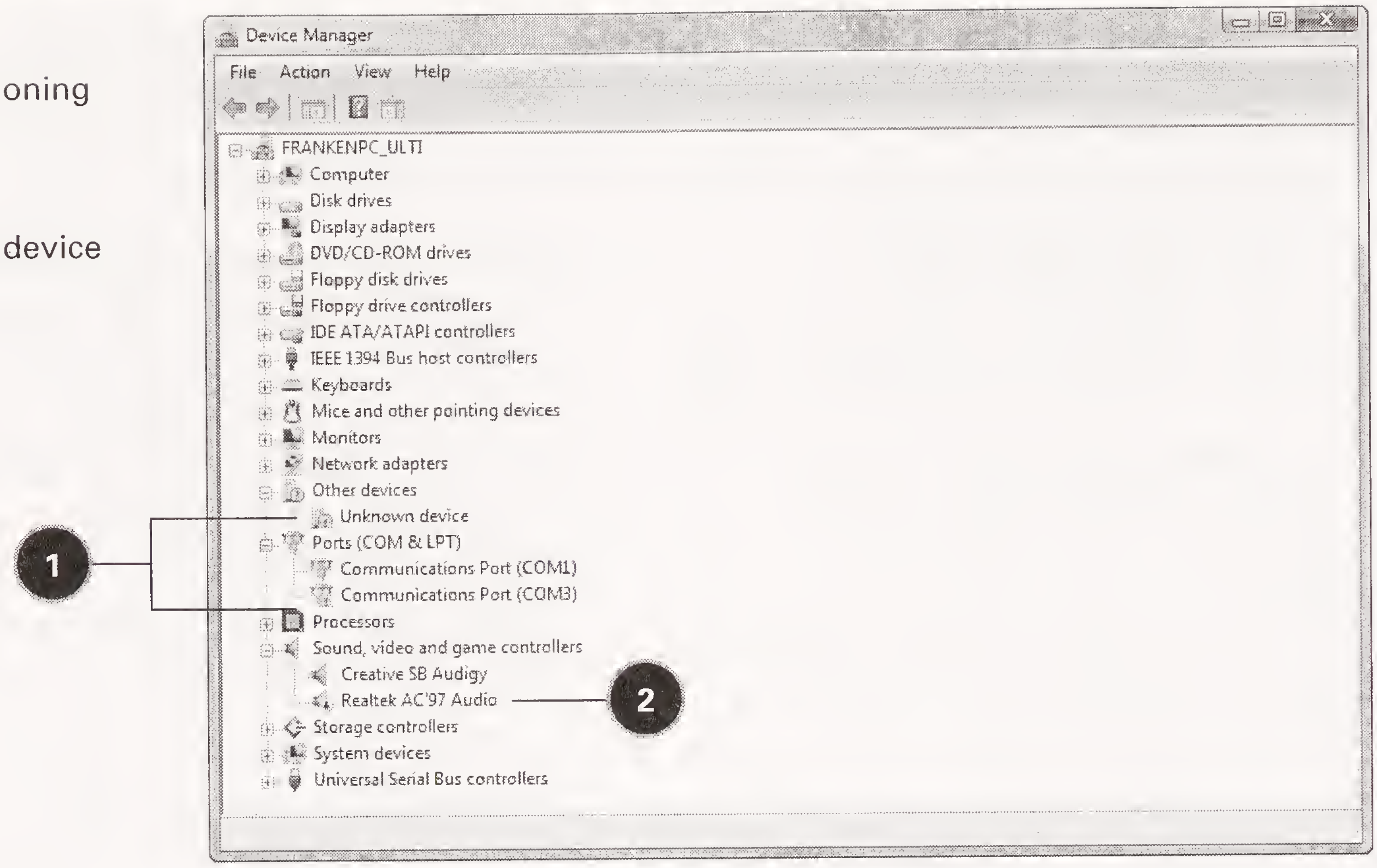
- Your system runs only Windows Vista—Press F8 at startup when prompted.
- Your system dual-boots Windows Vista and an older version of Windows—From the Windows Boot Manager display listing your choices, press F8 before the timer counts down to zero.
- Your system uses the F8 key to display a boot device menu or other options—See the system or motherboard documentation. For example, with some Asus motherboards you must first press F6 and then press F8 to display the Windows Boot Manager.

Use the Start Windows Normally option if you change your mind about selecting a special startup mode.

If your system won't start normally, even if the reason is because of a power glitch or some other one-time problem, chances are pretty good that the next time you start it you'll see a condensed version of the Advanced Boot Options menu displayed along with a "Windows Did Not Start Properly" message advising you to start the system in Safe Mode.

You might be tempted to select Start Windows Normally instead, but take it from me, if Windows Vista didn't start properly the last time, it prefers being started in Safe Mode before you try a normal restart. If you skip Safe Mode, you may be in for a frustrating time. So, select Safe Mode if the system offers it and take a short break while the system starts. Wait a moment, restart the system, and you should be back in normal Windowsland in just a few minutes.

If you're a Device Manager newbie, here's an easy rule of thumb to keep in mind: The Device Manager lists only categories when the devices in that category are working (that is, when Windows Vista can talk to the hardware driver and the driver says, "Yo!" in reply). However, if a particular category is expanded when you open the Device Manager, that means there's trouble in Deviceland.


Device Manager
File Action View Help
FRANKENPC_ULTI
Computer
Disk drives
Display adapters
DVD/CD-ROM drives
Floppy disk drives
Floppy drive controllers
IDE ATA/ATAPI controllers
IEEE 1394 Bus host controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Other devices
Unknown device
Ports (COM & LPT)
Communications Port (COM1)
Communications Port (COM3)
Processors
Sound, video and game controllers
Creative SB Audigy
Realtek AC'97 Audio
Storage controllers
System devices
Universal Serial Bus controllers
1
2

① Malfunctioning devices

② Disabled device

Figure 15.12

The Windows Vista Device Manager with malfunctioning and disabled devices displayed.

NOTE

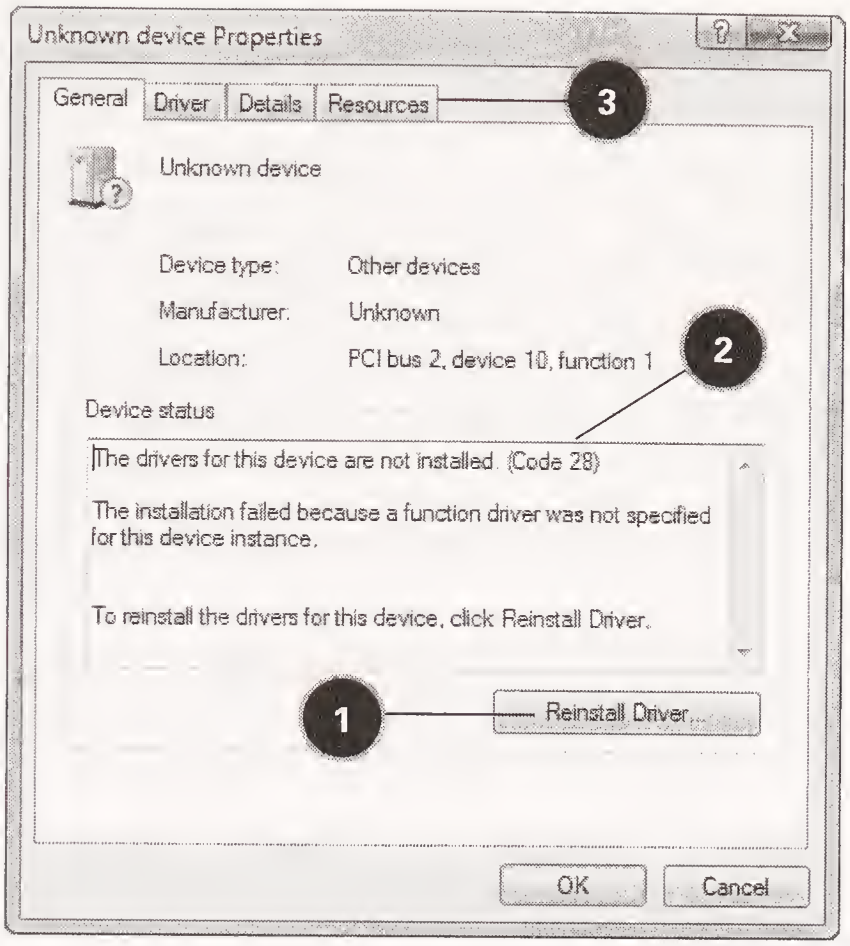
If you disable an on-board device (for example, a parallel [LPT] port) in the system BIOS, the Windows Device Manager will never see it. It displays only ports visible when Windows starts.

In Figure 15.12, there are two different issues listed:

- The yellow ! sign (see the COM 1 and Unknown Device entries) indicates marked devices have problems. The background is a triangle, rather than a circle as with Windows 95 through XP.
- The down arrow icon (see the Realtek AC '97 Audio entry) indicates the device is disabled by Device Manager, replacing the red X familiar to Windows 95 through XP users.

As you can see, it's easy to spot problem devices in Device Manager because they jump out at you to say "fix me now!" So, what do you do first? Double-click the device to display its properties sheet. The General tab displays device status and allows you to enable or disable the device. In the case of problem devices, it also displays an error code and a solution button (which has various labels indicating what happens when you click it). Figure 15.13 shows the General tab for the Unknown Device shown in Figure 15.12.

Start by looking at the Device Manager error codes and solutions shown on the General tab. Use the error code listing provided by Microsoft at http://support.microsoft.com/default.aspx?scid=kb;en-us;Q310123 to diagnose your system (Windows XP and Vista use the same error codes).



Unknown device

Device type: Other devices

Manufacturer: Unknown

Location: PCI bus 2, device 10, function 1

Device status

The drivers for this device are not installed. (Code 28)

The installation failed because a function driver was not specified for this device instance.

To reinstall the drivers for this device, click Reinstall Driver.

1 Solution button

2 Device Manager code

3 Properties tabs for device

Figure 15.13

Click the solution button (when offered) to solve problems with a malfunctioning device.

In many cases, the solution button works like the "Easy" button in the TV commercial—it solves the problem for you. But what if the solution button doesn't do the trick for you? You may need to use other tabs and work a little bit harder to find a solution.

In some cases, you may need to work with the other tabs on a device's properties sheet to get it up and running:

- The Driver tab displays device driver files and versions and enables you to update or roll back the driver. In many cases, if an updated driver is available, it can solve problems with malfunctioning devices.
- The Resources tab displays the device's current and alternative settings for IRQ, DMA, I/O port, and memory addresses.
- The Details tab gives you access to more than two dozen arcane bits of information, including the PnP vendor ID (useful for tracking down who's responsible for drivers for an Unknown Device such as the one shown in Figure 15.13).

Other tabs you may see with some devices include

- Port Settings—Used by communication ports to set speeds and other configuration options

- Advanced—Used by Ethernet network ports to configure flow control and other configuration options and by USB host controllers to display connected devices and set configuration options
- Advanced Settings—Used by ATA/IDE host adapters to display connected devices and configure DMA transfer options
- Diagnostics—Used by dial-up modems and fax modems to perform diagnostic tests
- Power—Used by USB root hubs to display available power and power usage per USB port
- Power Management—Used by various port types to configure power management settings for connected devices

Table 15.1 gives you some useful tips for putting the power of the Device Manager's other tabs to work for you.

Table 15.1 Troubleshooting with Device Manager

If…	Properties Sheet to Open	Use This Tab…	To Perform This Action…
A USB device doesn't work when plugged into a USB generic hub.	USB generic hub	Power	Check power levels required for device versus provided by hub. Make sure hub provides enough power for device.
A device doesn't work after a driver is updated.	Malfunctioning device	Driver	Use the Rollback Driver button to go back to the previous driver. Manually install an older driver if this button doesn't work.
A legacy port (communications, printer, PS/2 mouse) doesn't work because of a hardware conflict.	Malfunctioning device	Resources	If Use Automatic Settings is not in use, select it. If problems persist, disable this option and choose a setting from the Setting based on menu. On some systems, you may need to reset the device's resources in the system BIOS.
A device is listed as an Unknown Device.	Unknown device	Details	Select the Hardware ID's property and find the Vendor ID number (VEN_xxxx). Look up the vendor using an online database such as www.pcidatabase.com. Go to the vendor's website and download the appropriate driver.

If...	Properties Sheet to Open	Use This Tab...	To Perform This Action...
A dial-up modem doesn't appear to work.	Modem	Diagnostics	Click Query Modem and see whether the modem responds. If an internal modem fails to respond, remove and reinstall it. For an external modem, make sure it's turned on. Check phone cables.
Problems writing CD or DVD media.	ATA/IDE host adapter connected to CD or DVD drive	Advanced Settings	If DMA is disabled, enable it and retry with new media. Check cables.
A device can't wake up when the system comes out of standby.	Port used by device	Power management	Disable option allowing the computer to turn off the device to save power.
A device built in to your system is not listed in Device Manager.	—	—	You must enable the device in the system BIOS, save changes, and restart your system before Windows Vista can manage the device.

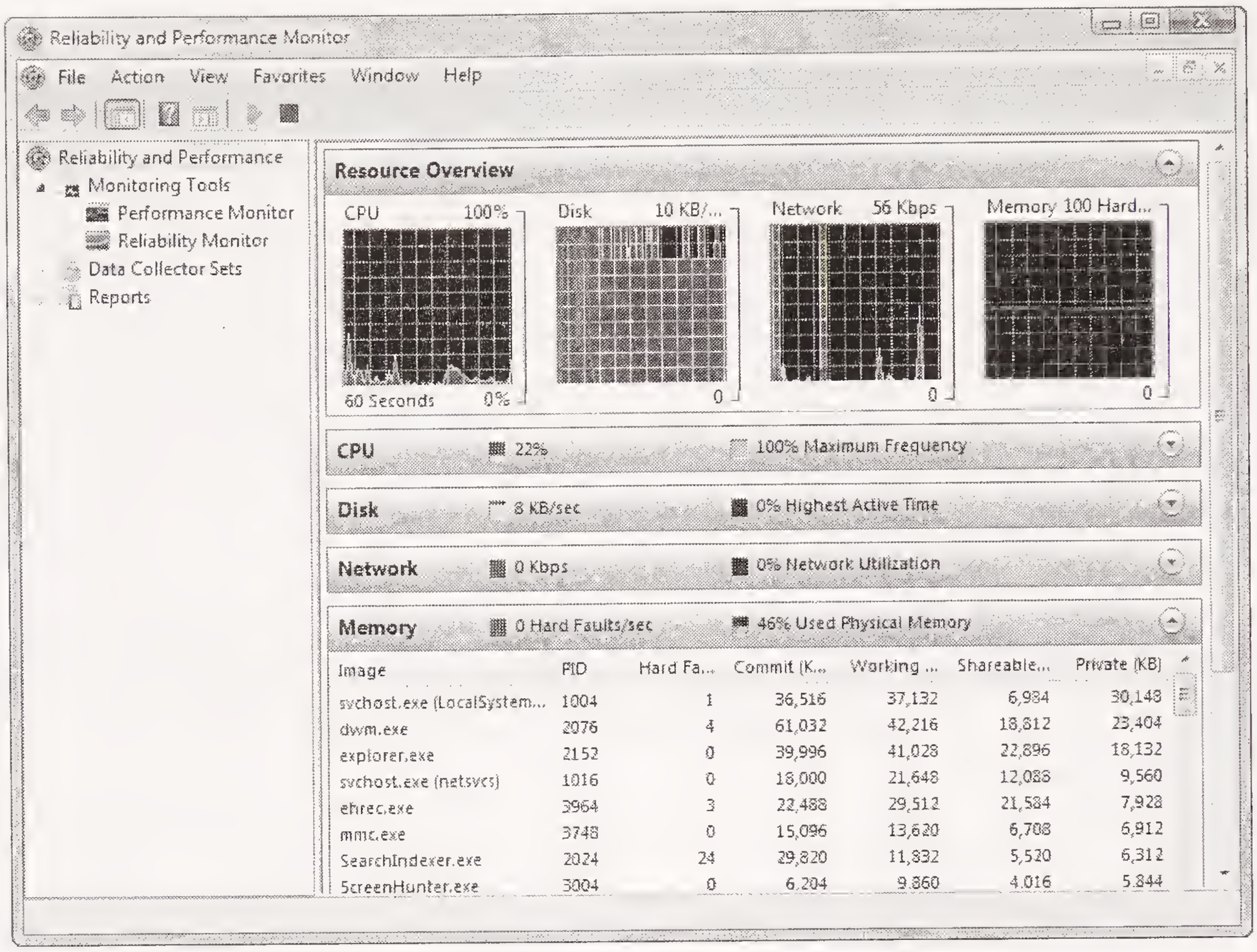
Using Reliability and Performance Monitor

Did you ever wonder just how fast and reliable your system is? Windows Vista can now answer that question for you with its brand-new Reliability and Performance Monitor, located in the Advanced Tools section of Performance Information and Tools in the Control Panel.

When you start the monitor, it opens to the Resource Overview (see Figure 15.14) to provide you with real-time information about the performance of your processor, disk drives, network, and memory subsystems.

How can you use this information to help find system bottlenecks? If you find that your system memory in use stays above 80% consistently with a typical collection of programs running, it's time to add more RAM. If your CPU utilization is near 100% frequently and you have a single-core processor, consider upgrading to a dual-core processor such as an Intel Core Duo or AMD Athlon 64 x2.

To dig deeper into the details of a particular subsystem or device, open the Performance Monitor node and configure a counter to keep track of what's going on.


Reliability and Performance Monitor
File Action View Favorites Window Help
Reliability and Performance
Monitoring Tools
Performance Monitor
Reliability Monitor
Data Collector Sets
Reports
Resource Overview
CPU 100%
60 Seconds 0%
Disk 10 KB/...
0
Network 56 Kbps
0
Memory 100 Hard...
0

CPU 22% 100% Maximum Frequency

Disk 8 KB/sec 0% Highest Active Time

Network 0 Kbps 0% Network Utilization

Memory 0 Hard Faults/sec 46% Used Physical Memory

Image	PID	Hard Fa...	Commit (K...	Working ...	Shareable...	Private (KB)
svchost.exe (LocalSystem...	1004	1	36,516	37,132	6,984	30,148
dwm.exe	2076	4	61,032	42,216	18,812	23,404
explorer.exe	2152	0	39,996	41,028	22,896	18,132
svchost.exe (netsvcs)	1016	0	18,000	21,648	12,088	9,560
ehrec.exe	3964	3	22,488	29,512	21,584	7,928
mmc.exe	3748	0	15,096	13,620	6,708	6,912
SearchIndexer.exe	2024	24	29,820	11,832	5,520	6,312
ScreenHunter.exe	3004	0	6,204	9,860	4,016	5,844

Figure 15.14

Viewing the details of Memory usage with the Resource Overview.

Click Reliability Monitor (see Figure 15.15) to see how reliable your system has been over time, and on any given date

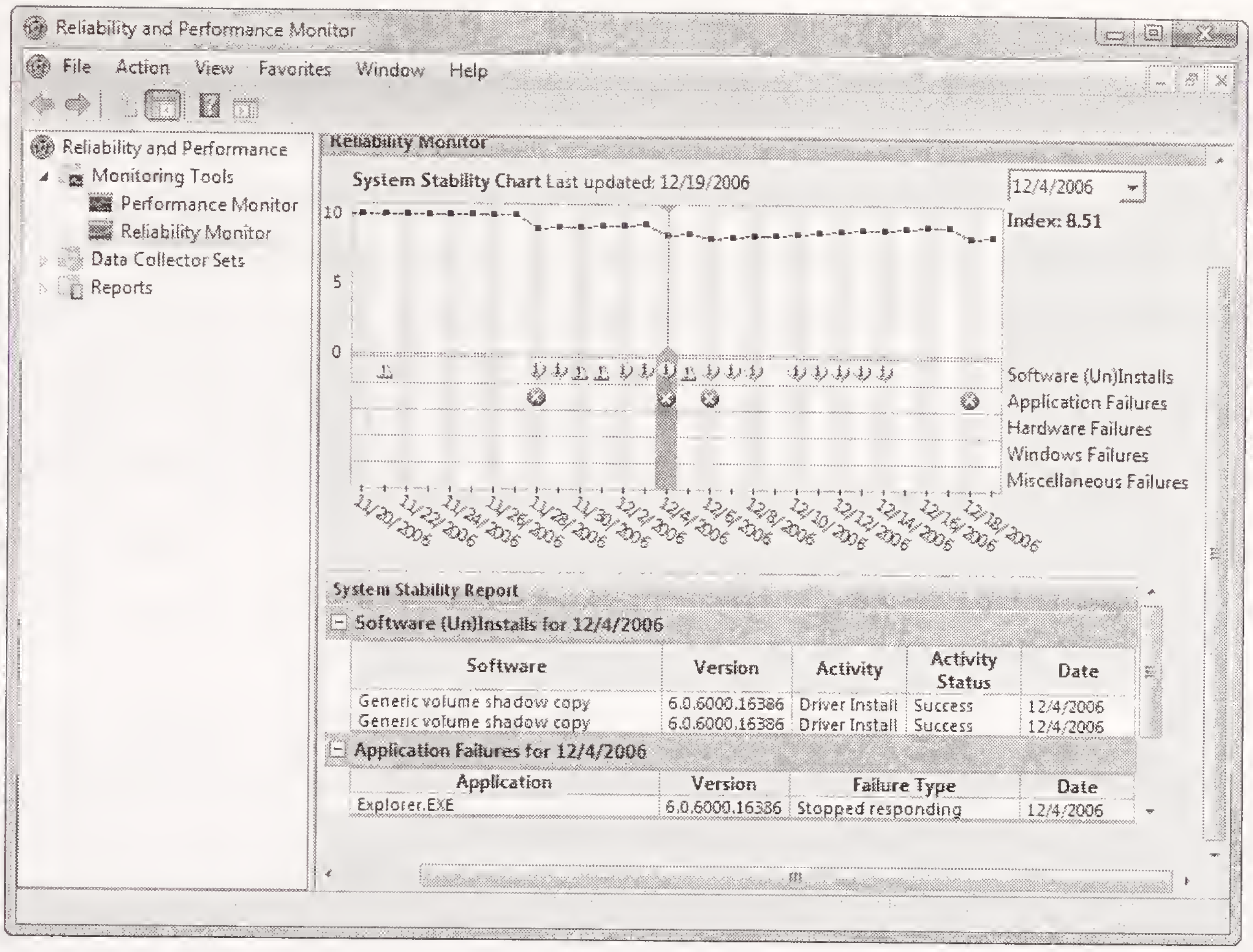
Reliability Monitor tracks application failures, hardware failures, Windows failures, and miscellaneous failures; tracks driver and application installs and uninstalls; and captures version information. All of this information is digested into a reliability index.

NOTE

A yellow ! symbol in the Reliability Monitor indicates a failed application or driver install, whereas a red X symbol indicates other types of failures. A blue information (i) symbol indicates software or driver installation or uninstallation.

The Reliability and Performance Monitor has one more trick up its sleeve: the capability to analyze the health of your entire system. To create a System Diagnostics report (also known as the system health report), open the Data Collector Sets node in the Reliability and Performance Monitor, click System, right-click System Diagnostics, and select Start. You can also start the report from the Advanced Tools menu by selecting 'Generate a System Health Report.'

To view the report, open the Reports node, the System node, the System Diagnostics node, and click the report shown (it is displayed automatically when you start the process from the Advanced Tools menu). Figure 15.16 shows a portion of a typical report.


Reliability and Performance Monitor
File Action View Favorites Window Help
Reliability and Performance
Monitoring Tools
Performance Monitor
Reliability Monitor
Data Collector Sets
Reports
Reliability Monitor
System Stability Chart Last updated: 12/19/2006
12/4/2006
Index: 8.51
10
5
0
Software (Un)Installs
Application Failures
Hardware Failures
Windows Failures
Miscellaneous Failures
11/20/2006
11/22/2006
11/24/2006
11/26/2006
11/28/2006
11/30/2006
12/2/2006
12/4/2006
12/6/2006
12/8/2006
12/10/2006
12/12/2006
12/14/2006
12/16/2006
12/18/2006

System Stability Report

Software (Un)Installs for 12/4/2006

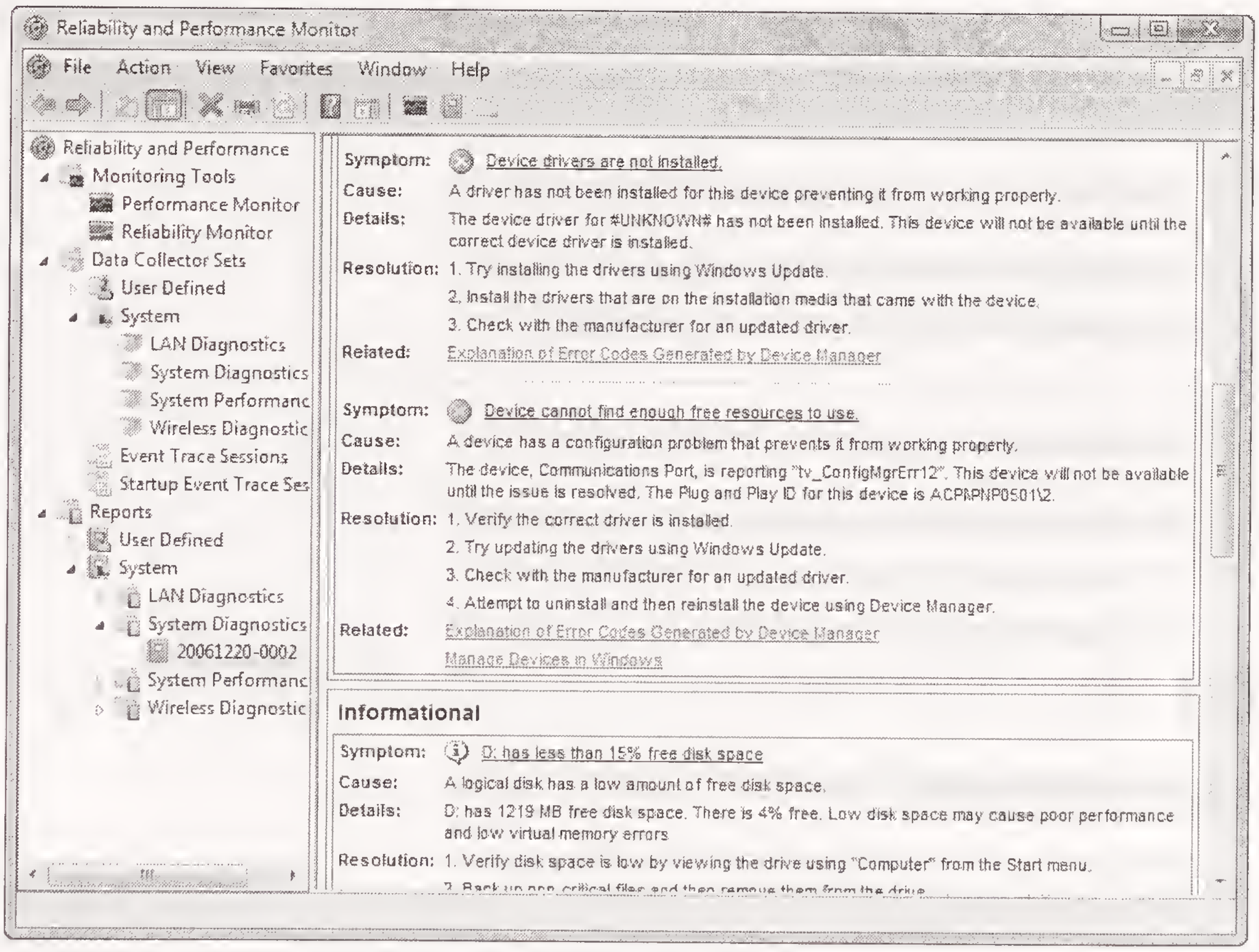
Software	Version	Activity	Activity Status	Date
Generic volume shadow copy	6.0.6000.16386	Driver Install	Success	12/4/2006
Generic volume shadow copy	6.0.6000.16386	Driver Install	Success	12/4/2006

Application Failures for 12/4/2006

Application	Version	Failure Type	Date
Explorer.EXE	6.0.6000.16386	Stopped responding	12/4/2006

Figure 15.15

Reliability Monitor tracks application, hardware, Windows, and miscellaneous failures to calculate a reliability index.


Reliability and Performance Monitor
File Action View Favorites Window Help
Reliability and Performance
Monitoring Tools
Performance Monitor
Reliability Monitor
Data Collector Sets
User Defined
System
LAN Diagnostics
System Diagnostics
System Performanc
Wireless Diagnostic
Event Trace Sessions
Startup Event Trace Ses
Reports
User Defined
System
LAN Diagnostics
System Diagnostics
20061220-0002
System Performanc
Wireless Diagnostic

Symptom: Device drivers are not installed.
Cause: A driver has not been installed for this device preventing it from working properly.
Details: The device driver for #UNKNOWN# has not been installed. This device will not be available until the correct device driver is installed.
Resolution: 1. Try installing the drivers using Windows Update.
2. Install the drivers that are on the installation media that came with the device.
3. Check with the manufacturer for an updated driver.
Related: Explanation of Error Codes Generated by Device Manager

Symptom: Device cannot find enough free resources to use.
Cause: A device has a configuration problem that prevents it from working properly.
Details: The device, Communications Port, is reporting "tv_ConfigMgrErr12". This device will not be available until the issue is resolved. The Plug and Play ID for this device is ACPI\PNP0501\2.
Resolution: 1. Verify the correct driver is installed.
2. Try updating the drivers using Windows Update.
3. Check with the manufacturer for an updated driver.
4. Attempt to uninstall and then reinstall the device using Device Manager.
Related: Explanation of Error Codes Generated by Device Manager
Manage Devices in Windows

Informational

Symptom: D: has less than 15% free disk space
Cause: A logical disk has a low amount of free disk space.
Details: D: has 1219 MB free disk space. There is 4% free. Low disk space may cause poor performance and low virtual memory errors
Resolution: 1. Verify disk space is low by viewing the drive using "Computer" from the Start menu.
2. Back up non-critical files and then remove them from the drive

Figure 15.16

A portion of a typical System Diagnostics report.

System Diagnostics digs deeply into both the hardware and software sides of your system, checking software and hardware configuration; CPU, disk, memory, and network subsystems; disabled devices; device drivers; antivirus and firewall status; resource usage; system services; startup programs; IDE SMART disk status; Windows Experience score; and network interfaces. It would take a lot of jumping through different portions of Control Panel to track down this information, but thanks to System Diagnostics's system health report, you no longer need to.

NOTE

The name of the report is created from the date run and the number of reports run on that date. For example, a report named 20070202_0001 is the first report run on February 2, 2007.

Restoring Files

Delete the only copy of your Great American Novel? Replace a high-resolution digital photo with a tiny version optimized for email? If you use File and Folder Backup (and you know you should!), you can save your sanity by restoring files from your backup. And, if you use Business, Enterprise, or Ultimate editions, you can also retrieve previous versions of files with Shadow Copy.

To retrieve files with File and Folder Backup, open the Backup and Restore Center and click Restore Files. You can retrieve files from the latest backup or an older backup.

If you overwrite a file, open the appropriate Explorer view and right-click the file. Select Properties, and open the Previous Versions tab to see whether there is a previous version of the file. To replace the current version with a previous version, select the version you want to restore (more than one maybe listed) and click Restore. To keep the current version and retrieve the old version as well, select the old version you want to use and click Copy. Specify a new location for the file from the pop-up navigation window.

Using the Windows Vista Recovery Environment

If you've ever had a catastrophic system failure with Windows XP, you've probably cursed the cryptic Recovery Console included in Windows XP. It's hard to use, and even harder to understand. Fortunately, Windows Vista has banished the Recovery Console (an unlovely holdover from Windows

2000) and replaced it with the Recovery Environment, a full-featured system—and data—recovery toolkit that has two virtues often lacking in Recovery Console:

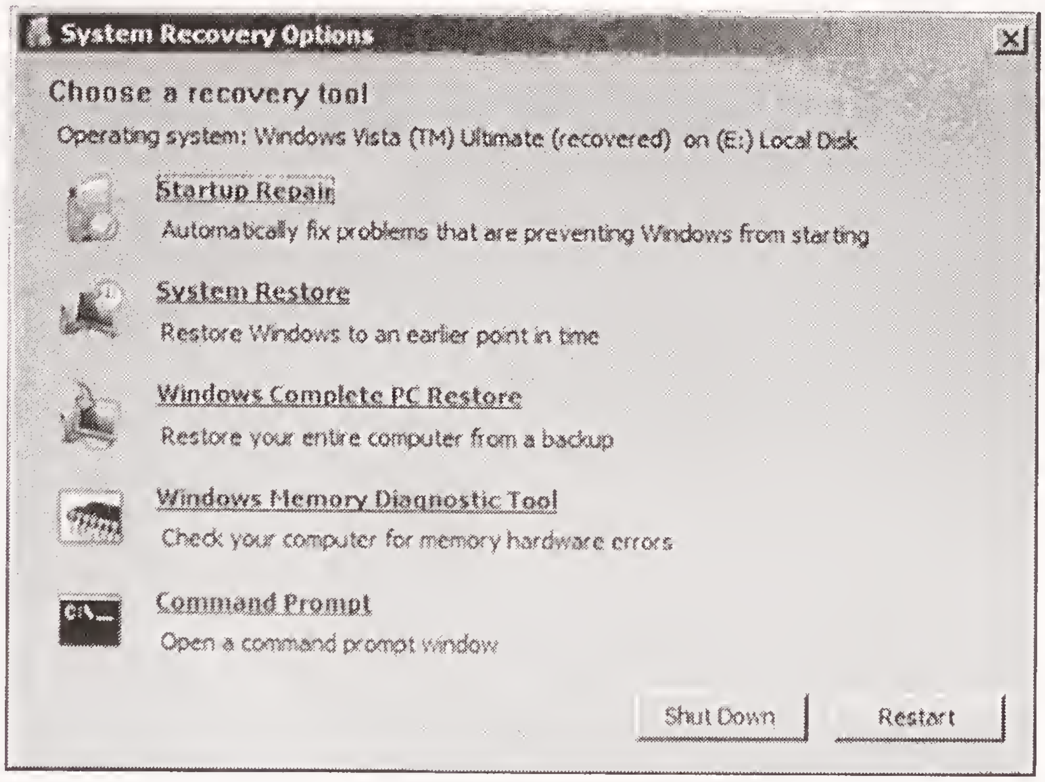
- It's easy!
- It works!

Use the Recovery Environment only when you have a serious problem with your computer, defined as:

- It won't start.
- It starts only in Safe Mode.

To start the Windows Vista Recovery Environment, insert the Windows Vista DVD into the system's DVD drive and restart the system. When you are prompted to press a key to boot from CD or DVD, press the spacebar or another key. When the Install Windows dialog is displayed, select or confirm language, time and currency format, and keyboard or input method settings and click Next. When the Install Now dialog appears, click Repair Your Computer.

When you select this option, Windows Vista locates your operating system. Click Next to continue, and the System Recovery Options dialog shown in Figure 15.17 appears.



System Recovery Options

Choose a recovery tool

Operating system: Windows Vista (TM) Ultimate (recovered) on (E:) Local Disk

Startup Repair
Automatically fix problems that are preventing Windows from starting

System Restore
Restore Windows to an earlier point in time

Windows Complete PC Restore
Restore your entire computer from a backup

Windows Memory Diagnostic Tool
Check your computer for memory hardware errors

Command Prompt
Open a command prompt window

Figure 15.17

System Recovery Options tools.

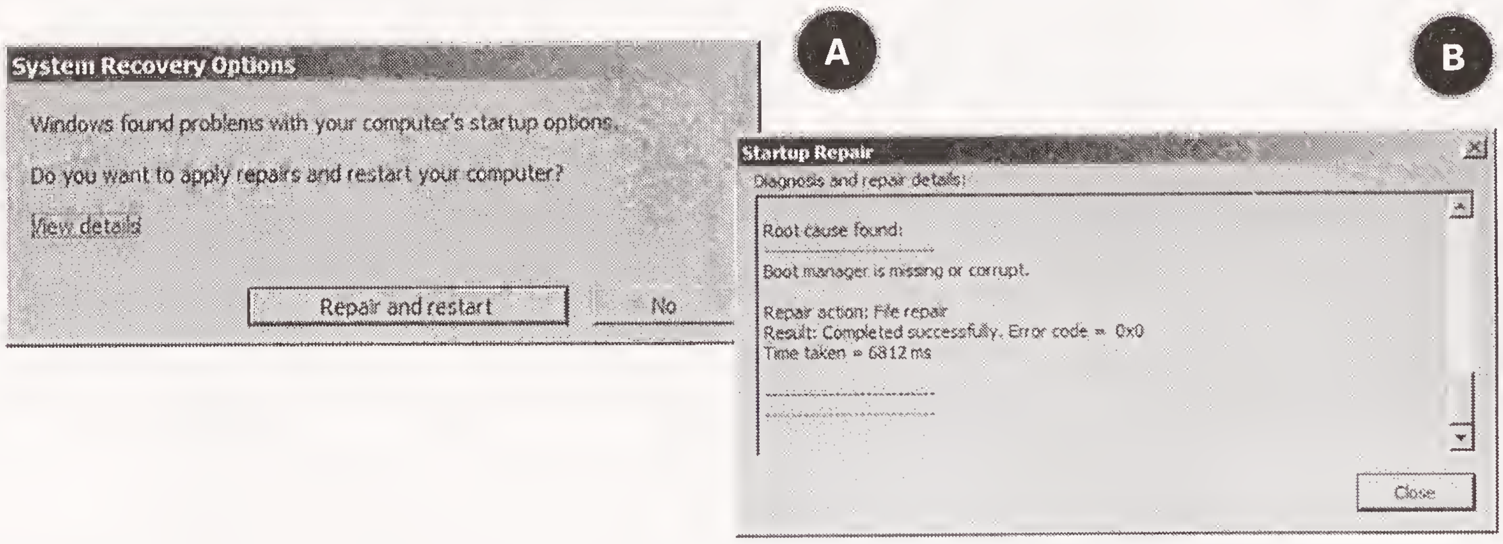
The Recovery Environment provides five tools designed to get your system working:

- Startup Repair—Fixes boot-level startup problems
- System Restore—Returns your system to a previous configuration
- Command Prompt—Provides access to all Windows Vista command-prompt features and programs, including file and folder copying, system management, and many more
- Windows Complete PC Restore—Performs a "bare-metal" system restoration to its as-imaged state
- Windows Memory Diagnostics Tool—Tests system memory

Using Startup Repair

To cure a system that won't start, select Startup Repair. After Startup Repair analyzes your system, you have two choices:

- Click Repair and Restart (see Figure 15.18 A) to repair your system automatically and restart it.
- Click the View Details link in Figure 15.18 A if you're curious about what was fixed. Scroll through the repairs (see Figure 15.18 B), and click Close to return to the Repair and Restart dialog. Click Finish to repair your system and restart it.



Windows found problems with your computer's startup options.

Do you want to apply repairs and restart your computer?

```
Root cause found:
---------------------------
Boot manager is missing or corrupt.

Repair action: File repair
Result: Completed successfully. Error code = 0x0
Time taken = 6812 ms

---------------------------
---------------------------
```

A Repairing startup problems.

B Viewing the details of a startup problem.

Figure 15.18

Using Startup Repair

When your system restarts, don't press the spacebar when prompted to boot from the DVD—instead, see whether Windows Vista's ready to straighten up and fly right.

Using System Restore

System Restore, as in Windows Me and Windows XP, can restore your system to an earlier configuration without loss of data. In Windows Vista, the big news is that you can run System Restore from the new Recovery Environment (refer to Figure 15.17) or after starting Windows Vista.

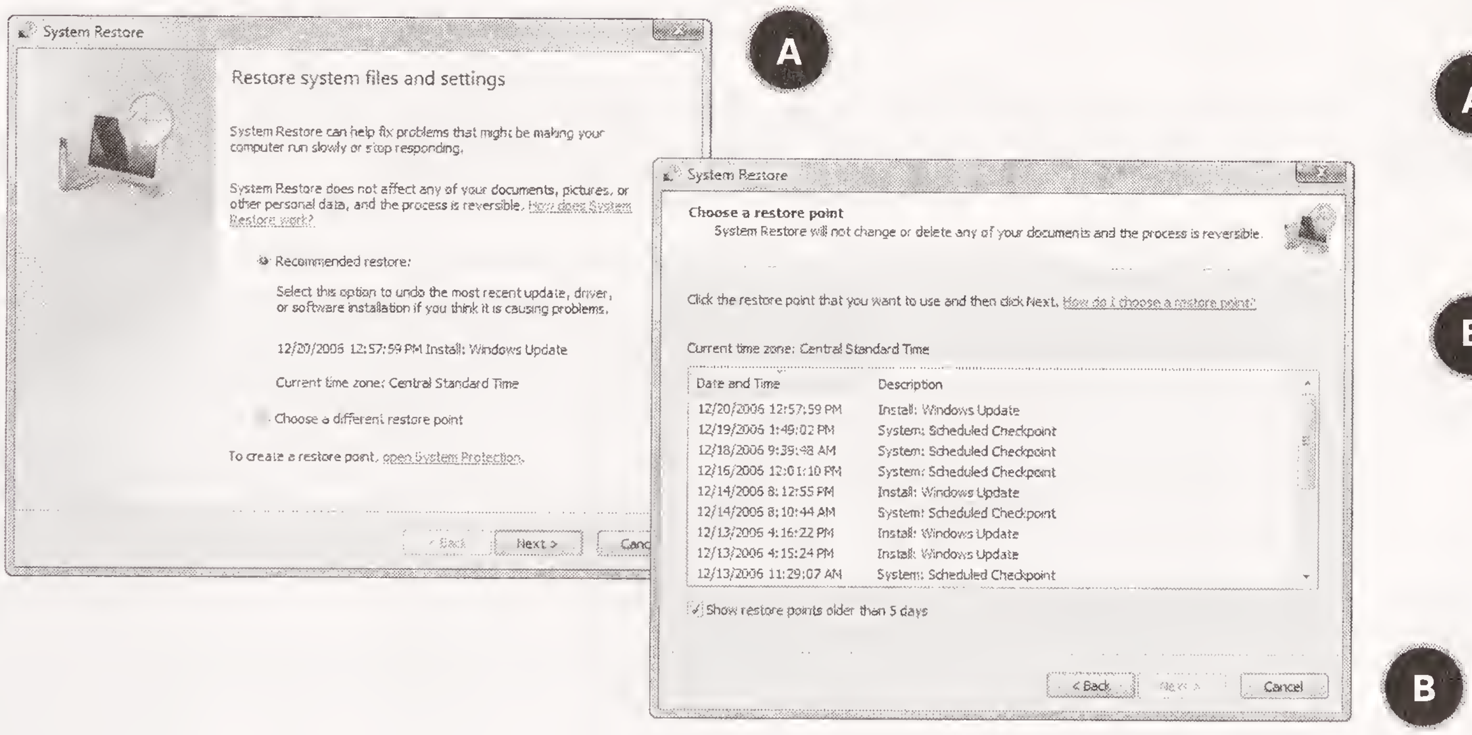
To start System Restore after starting Windows Vista, either open the Control Panel and select System and Maintenance, System, System Protection, System Restore, or select Start, All Programs, System Tools, System Restore.

Regardless of how you start it, Windows Vista's System Restore has gone through a cosmetic makeover to improve its ease of use. You can restore the most recent restore point, or select from others (see Figure 15.19).

Click the Show Restore Points Older Than 5 Days box if you want to see older restore points.

TIP

You can run Startup Repair up to five times before it gives up. If your system can't restart the first time you try it, keep trying this option until your system runs properly or until Startup Repair cannot perform any more repairs.



Restore system files and settings

System Restore can help fix problems that might be making your computer run slowly or stop responding.

System Restore does not affect any of your documents, pictures, or other personal data, and the process is reversible. How does System Restore work?

● Recommended restore:

Select this option to undo the most recent update, driver, or software installation if you think it is causing problems.

12/20/2006 12:57:59 PM Install: Windows Update

Current time zone: Central Standard Time

○ Choose a different restore point

To create a restore point, open System Protection.

Choose a restore point

System Restore will not change or delete any of your documents and the process is reversible.

Click the restore point that you want to use and then click Next. How do I choose a restore point?

Current time zone: Central Standard Time

Date and Time	Description
12/20/2006 12:57:59 PM	Install: Windows Update
12/19/2006 1:49:02 PM	System: Scheduled Checkpoint
12/18/2006 9:39:48 AM	System: Scheduled Checkpoint
12/16/2006 12:01:10 PM	System: Scheduled Checkpoint
12/14/2006 8:12:55 PM	Install: Windows Update
12/14/2006 8:10:44 AM	System: Scheduled Checkpoint
12/13/2006 4:16:22 PM	Install: Windows Update
12/13/2006 4:15:24 PM	Install: Windows Update
12/13/2006 11:29:07 AM	System: Scheduled Checkpoint

☑ Show restore points older than 5 days

A Selecting the most recent restore point.

B Selecting from other restore points.

Figure 15.19

Using System Restore

After you select a restore point, click Next. If your system contains multiple hard disks, you can select other drives to restore if system restore information is available. Click Finish to restore your system.

Using the Command Prompt

The command prompt available in the Windows Vista Recovery Environment enables full access to all accessible drives connected to the computer at startup. Unlike the limited Windows XP Recovery Console, which was primarily designed for restoring system files to a crashed system, the Windows Vista command prompt can use any command prompt program, including multiple file and folder-copy programs such as xcopy and robocopy. Command prompt enables you to copy data from a crashed system to another drive, including external USB drives. You can even format CD and DVD media from Command Prompt and copy files to the media.

Here are some of the commands you may find useful to run from the Recovery Environment command prompt (these same commands also work from a command prompt in Windows Vista):

- `regedit`—Views and edits the Windows Vista Registry
- `robocopy`—Powerful file and folder copying utility (better than `Xcopy`)
- `format`—Erases and prepares blank media for use. Use the `/fs:UDF` option to format CD or DVD media
- `bcdedit`—Displays and configures boot settings
- `chkdsk`—Checks drives for errors
- `exit`—Closes the command prompt
- `tasklist`—Lists running tasks
- `taskkill`—Kills a specified task
- `tree`—Displays a graphical chart of a folder (directory) structure
- `shutdown`—Shuts down a local or remote system
- `net`—Versatile network client configuration tool
- `dir`—Lists files and folders

To get help with any command-prompt program, type the program name and add `/?`.

WARNING

System Restore is a good choice for fixing system problems caused by a bad software or hardware installation. However, keep in mind that any other software or hardware installed after you restore to a particular time must be reinstalled. And, don't count on System Restore to fix problems caused by disk errors, accidental hard disk formatting, and the like. Use Startup Repair for bigger problems such as these.

TIP

To open a command prompt within the Windows Vista GUI, click the Start orb, All Programs, Accessories, Command Prompt. Note that this runs the command prompt with standard user privileges (even if you are an administrator), which aren't sufficient for some programs. To open the command prompt with administrator-level access, right-click Command Prompt and select Run as Administrator.

Restoring a Complete PC Backup and Restore Image

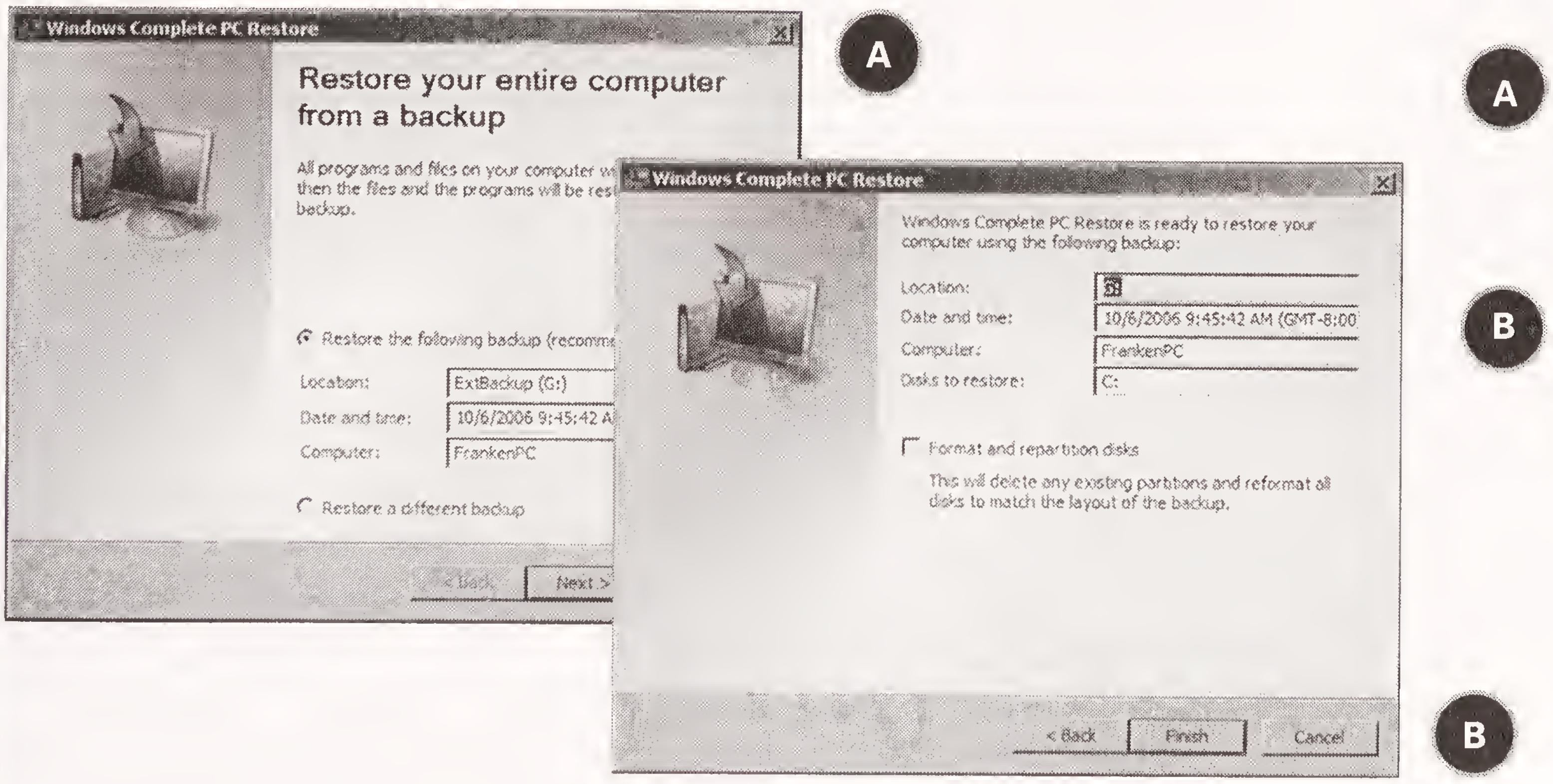
You should restore a Complete PC Backup (available in Windows Vista Ultimate, Enterprise and Business editions) only in drastic circumstances, such as a complete system failure. Basically, if Windows Vista won't start and you've already tried everything else, *and* you've made a Complete PC Backup, it's time to restore it. A Complete PC Restore sets your system back to its exact condition at the time of backup. Unlike System Restore, which leaves current data files behind although it resets Windows Vista's Registry to the specified earlier time, a Complete PC Restore formats your hard disk, wiping out any remaining information and replaces it with whatever you backed up. It's not called a "bare metal" restore for nothing!

NOTE

After you restore a Complete PC Backup, restore all of the file and folder backups available to bring your system as close to its prefailure condition as possible.

When you select Windows Complete PC Restore, select the backup you want to restore (see Figure 15.20 A) and make sure the correct source drive is listed. If you used removable media, insert it and verify that the correct backup is detected. Click Next to continue.

If you are restoring the backup to an unpartitioned hard disk, select the option to format and repartition your drives (see Figure 15.20 B). After the process finishes, your system boots to the Windows Vista desktop or user sign-in screen. You're (almost) back in business!



Restore your entire computer from a backup

All programs and files on your computer w… then the files and the programs will be res… backup.

● Restore the following backup (recomm…

Location: ExtBackup (G:)

Date and time: 10/6/2006 9:45:42 A…

Computer: FrankenPC

○ Restore a different backup

Windows Complete PC Restore is ready to restore your computer using the following backup:

Location:

Date and time: 10/6/2006 9:45:42 AM (GMT-8:00

Computer: FrankenPC

Disks to restore: C:

☐ Format and repartition disks

This will delete any existing partitions and reformat all disks to match the layout of the backup.

A Selecting the most recent restore backup.

B Reviewing options to use for restoration.

Figure 15.20

Preparing to restore a Complete PC Backup image.

WARNING

If you must perform a Complete PC Restore, keep in mind that your system is now back at the point it was when you performed the image backup. To get your data back, restore your file and folder backups (I hope you made some!). And, you must also reinstall any hardware or software you installed since the last image backup. No wonder Windows Vista nags you to run a full backup every 30 days!

Troubleshooting and Maintenance Best Practices

- Don't wait for problems to discover what's inside your PC—Run the reports and diagnostics listed in this chapter when your system is healthy and use them as a point of comparison when your system is not working properly. If you check your system configuration only when there are problems, you don't really know how your system is supposed to work when it's completely healthy.
- Test your backups—To test your file and folder backups, use the option to restore them to a specific folder. You can create a Test folder in your user folder and use it as a restore target. If you can't restore your backups, you have a problem. Better to find it out now than later.
- Open the Device Manager before you install a new device as well as afterward to see where the device is listed—To locate the device, open each category until you find it.

Index

Symbols

3D driver settings, 258-259
24-hour clock format, applying, 144
32-bit Windows Vista editions, 32-33
64-bit Windows Vista editions, 32-33

A

AAC format, 178
access control, principle of least access, 329
access to printers, denying, 139
accessibility settings, customizing, 91
accessing
  Microsoft Communities with Windows Mail, 154-155
  network shares from Network Map, 300
accounts. *See* user accounts
activating
  gadgets, 74
  Windows Vista, 43, 60-61, 136
Activity Reporting, enabling, 335
ad-hoc wireless networks, infrastructure networks versus, 290
add-on manager (IE 7), 280-281
add-ons (IE 7), troubleshooting, 281
address space load randomization (ASLR), 328
Administrator user accounts, 329-331
administrator-level access for Command Prompt, 382
Adobe Photoshop Elements' Save for Web option, 242
Adrian, Jens, 195
Advanced Search feature, 116-117
Advanced Tools dialog, 133-134
Aero interface, 7-8, 87
album art, creating for Windows Media Player 11, 197
Album view (Windows Media Player 11), 189
albums, deleting from portable media players, 205
All Programs menu, 80-81
Allow and Block Specific Programs dialog, 335
antiphishing (Windows Mail), 154
applets (Control Panel)
  AutoPlay, 139-140
  Color Management, 142
  Date and Time, 143-144
  Default Programs, 142-143
  Indexing Options dialog, 128-129
  list of, 124
  Offline Files, 136
  Performance Information and Tools dialog, 129-135
  Power Options dialog, 127-128
  Printers folder, 138-139
  Sound, 141
  Sync Center, 137-138
  System properties sheet, 125-127
  Welcome Center, 124-125
  Windows Anytime Upgrade, 135-136
  Windows Mobility Center, 144
applications
  core Windows Vista features, 25
  installing before using Windows Easy Transfer, 61
  moving between, 92-94
  sharing in Windows Meeting Space, 160-162
appointments (Windows Calendar), 164
Artist view (Windows Media Player 11), 189
ASLR (address space load randomization), 328
ATRAC audio format, 178
audio. *See also* Windows Media Player 11
  in games, troubleshooting, 259
  Sound applet, 141
audio formats, comparison of, 195
AutoPlay, 66, 139-140

B

background settings. *See* desktop background settings
Backup and Restore Center. *See* Windows Backup and Restore Center
backups
  Complete PC Backup and Restore Image, restoring, 383-384
  file and folder backups
    creating, 322-324
    restoring files, 378
  image backups, creating, 321-322
  selecting media for, 321
  strategies for, 320
Balanced power setting, 127
basic tasks
  creating, 363
  tasks versus, 362
bcdedit command, 382
benchmarks (3D driver settings), 259
best practices
  contact management, 170-171
  disk maintenance, 384
  file management, 118-119
  IE 7, 286-287
  networking, 306
  security, 350-351
  troubleshooting, 384
  user interface, 95
  Windows Media Center, 244
  Windows Movie Maker, 244-245
  Windows Photo Gallery, 245
bit rates, ripping music, 195
BitLocker, 22, 349
  disk partition setup, 47-48
  dual-booting, 58
  size of disk partitions, 45
black-and-white photos, creating, 240
blocking. *See also* Parental Controls
  games, 344
  incoming connections, 343
bookmarks. *See* Favorites
boot drives, selecting, 53
boot options in System Configuration (MSConfig), 369-371
breadcrumb navigation structure, 100
Browsing History settings (IE 7), 283
Burn Options tab (Windows Media Player 11), 187
burning

- CDs/DVDs, 208-209
  - Joliet file system, 100
  - tips for, 324-325
  - in Windows Media Center, 234-235
  - in Windows Media Player 11, 216-217
- data CDs/DVDs, 312
  - Live File System format, 312-313
  - mastered discs, 313-316
- video DVDs, 316-319

C

calendar programs. *See* Windows Calendar
CardSpace, 336-338
category view (Control Panel), 122-123
CD/DVD drives, transferring from, 69
CDs/DVDs
- burning, 208-209
  - data CDs/DVDs, 312-316
  - Joliet file system, 100
  - tips for, 324-325
  - in Windows Media Center, 234-235
  - in Windows Media Player 11, 216-217
- Windows Easy Transfer, 65

chkdsk command, 382
choosing. *See* selecting
classic menus, Windows Media Player 11, 179-180
Classic Start menu, enabling, 83
Classic View (Control Panel), 122
clean installs, 37-43
- BitLocker setup, 47-48
- disk partitions, creating, 44-47
- setup, 43-44

clocks. *See* time
Collaboration. *See* Windows Collaboration
collections, photo (Windows Photo Gallery), 242-243
Color Management applet, 142
color profiles, 142
color schemes, customizing, 87-88
combining calendars, 165-166
Command Prompt, in Recovery Environment, 382
communications applications, new features, 13-15
Compatibility tab, 260-261
Complete PC Backup and Restore Image
- creating, 321-322
- files included, 321
- restoring, 383-384

CompletePC Backup, 19
Computer Explorer, 104-105
configuring. *See also* customizing
- fax and sender settings (Windows Fax and Scan), 168
- fax service (Windows Fax and Scan), 167-168
- gadgets, 75-76
- network discovery, 296-297
- secure logon, 332
- UAC (user account control), 332-333
- visualizations in Windows Media Player 11, 193
- Windows Firewall, 343-347
- Windows Media Center. *See* Windows Media Center, configuring
- Windows Media Player 11. *See* Options dialog (Windows Media Player 11)
- Windows Sidebar, 77
- Windows Vista, 48-51

Connect Now technology, 291
connections
- for disk drives, 46
- to hidden wireless networks, 292
- troubleshooting, 302-303
- to wireless networks, 290-291

contact groups, creating in Windows Contacts, 158-159
contacts. *See also* Windows Contacts
- best practices for contact management, 170-171
- contact management practices to avoid, 171
- importing and creating, 156-157
- pictures, changing, 157
- trusted contacts, 158

Content Advisor, 284-285
Content tab (IE 7 Internet Options), 283-285
ContentProtect, 336
ContentWatch, 336
context menus in Explorer windows, 113-114
Control Panel
- applets. *See* applets (Control Panel)
- category view, 122-123
- Classic View, 122
- opening, 122
- Problem Reports and Solutions applet, 366-367
- User Accounts and Family Safety category, 329-330

converting drives to NTFS, 147-149
copy protection when ripping music, 195
core Windows Vista features, 24-26
Creative ALchemy driver, 259
customized saved searches, 116-117
customizing. *See also* configuring
- desktop. *See* desktop, customizing
- display settings for Slide Show feature (Pictures Explorer), 102
- Favorite Links pane, 117
- Notification Area, 83-84
- Start menu, 81-82
- Taskbar, 83
- toolbars, 83
- video DVDs, 317-319

D

data CDs/DVDs, burning, 312
- Live File System format, 312-313
- mastered discs, 313-316

Date and Time applet, 143-144
Date Modified view in Explorer windows, 109
Default Programs applet, 142-143
default settings (Start menu), restoring, 82
defragmentation, 359-360
deleted files in search results, troubleshooting, 116
deleting
- albums from portable media players, 205
- files with Disk Cleanup, 360-361
- media files, 183

denying access to printers, 139
desktop
- customizing, 84
  - accessibility settings, 91
  - desktop background settings, 88
  - display settings, 85-87
  - font sizes, 89-90
  - icon sizes, 84-85
  - Personalization dialog, 85-86
  - screen saver settings, 89
  - sound effects settings, 89
  - Speech Recognition, 91-92
  - themes, 89
  - visual appearance settings, 87-88
- gadgets, 74-76
- new features, 7-8
- Notification Area, customizing, 83-84

    sharing in Windows Meeting Space, 160-162
    Start menu. *See* Start menu
    Taskbar, customizing, 83
    toolbars, customizing, 83
    Windows Sidebar, configuring, 77
Desktop Explorer, 106
Details pane, hiding, 100
Device Manager, 370-375
devices, synchronizing in Windows Media Center, 235
Devices Options tab (Windows Media Player 11), 185, 188
diagnostic startup in System Configuration (MSConfig), 368
diagnostics. *See* system diagnostics tools
digital media players. *See* portable media players
digital music. *See* audio
Digital Resolve website, 278
digital rights management (DRM), digital music and, 199-200
dir command, 382
DirectSound, 259
DirectX 10, 13, 257
DirectX Diagnostics, starting, 257
disabling
    games, 248
    Welcome Center, 125
Disk Cleanup, 360-361
disk defragmentation, 359-360
disk drives, 46
disk maintenance
    best practices, 384
    Task Scheduler, 361-364
    tools, 357-361
Disk Management, 146-149
disk partitions
    BitLocker setup, 47-48
    creating, 40, 44-47
    extending, 46
    primary partitions, creating for dual-boot installations, 54-56
    size of, 45
display settings
    customizing, 85-87, 102
    for games, 265
displays, configuring Windows Media Center, 223-224
documents
    filtering, 108-110
    finding recent, 108
    grouping, 108-110
    scanning, 169-170
    sorting, 108-110
Documents Explorer, 100-101, 110-111
DOSBox, 264
Downloads Explorer, 106
DPI Scaling dialog, 89-90
drivers
    for disk drives, installing, 46
    graphics cards, 3D driver settings, 258-259
drives, converting to NTFS, 147-149
DRM (digital rights management), digital music and, 199-200
dual-boot installations, 38, 53-58
DVD Maker. *See* Windows DVD Maker
DVDs. *See also* CDs/DVDs; video
    burning, 208-209
        tips for, 324-325
        video DVDs, 316-319
        in Windows Media Center, 234-235
        in Windows Media Player 11, 216-217
    image backups to, 321
    playing in Windows Media Player 11, 211-213, 217

E

EAC (Exact Audio Copy), 195
Ease of Access Center, 17. *See also* accessibility settings
Easy Transfer. *See* Windows Easy Transfer
editing
    song information, 104
    tag information in Windows Media Player 11, 196-199
    tasks, 363-364
editions of Windows Vista, 23-24
    64-bit versus 32-bit, 32-33
    for emerging markets, 31
    for European Union (EU), 31
    features in, 24-29
    Home Premium versus Home Basic, 30-31
    for power users, 30
    RAM and processor support, 30
    upgrading, 31
EFS (encrypted file system), 350
emerging markets, editions of Windows Vista for, 31
enabling
    Activity Reporting, 335
    Classic Start menu, 83
    games, 248
encrypted file system (EFS), 350
encrypted files in search results, 116
encryption with BitLocker, 349
enhancements to Windows Media Player 11, 182
error codes (Device Manager), 372
error-checking (disk maintenance tool), 357-359
ESRB (Entertainment Software Rating Board), 249
ESRB ratings in Games Explorer, 251-252
EU (European Union), editions of Windows Vista for, 31
Exact Audio Copy (EAC), 195
exceptions in Windows Firewall, 343
exit command, 382
Explorer windows, 16
    common features, 100
    Computer Explorer, 104-105
    Desktop Explorer, 106
    Documents Explorer, 100-101, 110-111
    Downloads Explorer, 106
    Favorite Links pane, customizing, 117
    Games Explorer, 248-256
    Music Explorer, 103-104
    Name menu, 108
    Open menu, 107
    opening, 97-99
    Organize menu, 107
    Pictures Explorer, 101-103, 112-113
    Recently Changed versus Recent Items, 108
    right-clicking, 113-114
    Saved Games Explorer, 106
    Searches Explorer, 106
    Shortcuts Explorer, 106
    sorting/grouping/filtering documents, 108-110
    Videos Explorer, 106
    Views menu, 107
extending disk partitions, 46
external hard disks (Windows Easy Transfer), 64-65

F

FAT32, 46
Favorite Links pane, 16, 100, 117
Favorites in IE 7, 270-271
Fax and Scan. *See* Windows Fax and Scan
feeds. *See* RSS feeds
file and folder backups, 19
    creating, 322-324
    restoring files, 378
file associations (Default Programs applet), 142-143
file extensions, indexing, 129
file formats
    .ics, 165

  - Windows Media Center support, 233
- file management
  - best practices tips, 118-119
  - core Windows Vista features, 25
  - Explorer windows. *See* Explorer windows
  - new features, 16-17
- File menu (Windows Media Player 11), 179
- file systems, NTFS
  - converting drives to, 147-149
  - Windows Vista differences in, 147
- filenames, length of, 100
- files
  - collecting for Windows Easy Transfer, 66-68
  - deleting with Desk Cleanup, 360-361
  - restoring, 378. *See also* Recovery Environment
  - sharing (Public folder), 118
  - transferring. *See* Windows Easy Transfer
- filtering documents, 108-110
- Find Album Info feature (Windows Media Player 11), 196
- finding. *See* search features
- Firefox versus IE 7
  - RSS feeds, 273
  - tabbed browsing, 268-269
  - zoom settings, 274
- firewalls, 342-347
- flash drives. *See* USB flash drives
- Flip 3D, 7
- FM radio, listening in Windows Media Center, 229-230
- folders
  - sharing, 303-305
  - user folders, structure of, 99-100
- font sizes, customizing, 89-90
- format command, 382
- free space on hard disks, 55

G

- gadgets, 74-76
- Gadgets Gallery, 74
- Game Controls dialog, 334-335
- Game Definition File (GDF), 251
- games. *See also* Games Explorer
  - 3D driver settings, 258-259
  - adding to Games Explorer, 250
  - audio, troubleshooting, 259
  - blocking/unblocking in Windows Firewall, 344
  - DirectX and, 257
  - display settings, 265
  - enabling/disabling, 248
  - hiding, 250
  - icons, changing, 266
  - legacy games, 260-265
  - new features, 12-13
  - playing/managing, 254-256
  - ReadyBoost and, 253
  - tips for, 265-266
- Games Explorer, 12-13, 248-250
  - adding games to, 250
  - ESRB ratings, 251-252
  - Games for Windows compatibility, 251
  - playing/managing games, 254-256
  - WEI ratings, 252-254
- Games for Windows, compatibility with Games Explorer, 251
- GDF (Game Definition File), 251
- General tab (IE 7 Internet Options), 282-283
- Genre view (Windows Media Player 11), 189
- GNOME Partition Editor, 40
- Goga Minpaso website (WEI ratings), 253-254
- graphical user interface. *See* GUI
- graphics cards, 3D driver settings, 258-259
- Group Policy Editor, 22
- grouping documents, 108-110
- GUI (graphical user interface)
  - best practices tips, 95
  - core Windows Vista features, 25
  - desktop. *See* desktop
  - IE 7, 268-275
  - new features, 7-8
  - open programs, moving between, 92-94
  - Power button, 94
  - shutting down system, 94-95
  - U.S. edition Windows Vista features, 26
  - Windows Media Player 11, 176-180

H

- handouts (Windows Meeting Space), 162
- hard disks
  - external hard disks (Windows Easy Transfer), 64-65
  - free space on, 55
  - physical hard disks, determining number of, 187
  - transferring from with Windows Easy Transfer, 69
  - troubleshooting, 359
- hardware upgrades, 131-133
- Help menu (Windows Media Player 11), 180
- Hibernate mode, 94
- hidden wireless networks, connecting to, 292
- hiding
  - Details pane, 100
  - games, 250
  - Navigation pane, 100
  - updates in Windows Update, 355
- High Performance power setting, 127
- Home Basic edition, 30-31
- Home Premium edition, 30-31
- Hotmail, Windows Mail and, 152

I

- iCal, 165
- icons
  - desktop icons, customizing, 84-85
  - for games, changing, 266
  - Start menu, 79
- ICRA3 rating system, 284
- .ics file format, 165
- identity confirmation with Windows CardSpace, 336-338
- IE 7 (Internet Explorer version 7), 14, 267
  - best practices tips, 286-287
  - Internet Options, 281-285
  - security, 20, 275-281
  - user interface, 268-275
- IL (integrity access levels), 277
- image backups, creating, 321-322
- image metadata (Pictures Explorer), 112-113
- images. *See also* Pictures Explorer
  - as screen savers, 89
  - tiling across multiple monitors, 88
- importing
  - calendars, 165-166
  - contacts, 156-157
- incoming connections, blocking in Windows Firewall, 343
- indexes, rebuilding, 116
- indexing file extensions, 129
- Indexing Options dialog, 128-129
- InfoCard. *See* Windows CardSpace
- Information Cards (Windows CardSpace), 336-338
- infrastructure wireless networks, ad-hoc networks versus, 290
- installing
  - applications before using Windows Easy Transfer, 61

  drivers for disk drives, 46
  operating systems to virtual machines, 262
  Windows Vista. *See* Windows Vista, installing
Instant Desktop Search, 16
integrating Windows Mail with Windows Contacts and Windows Calendar, 155
integrity access levels (IL), 277
interfaces (Windows Media Center), 220
interference with wireless networks, avoiding, 302
Internet Explorer version 7. *See* IE 7
Internet Options (IE 7), 281-282
  Content tab, 283-285
  General tab, 282-283
Internet Protocol v6 (IPv6), troubleshooting shared folder access, 305
inviting participants with Windows Calendar, 165
iPods. *See* portable media players
IPv6 (Internet Protocol v6), troubleshooting shared folder access, 305

J-L

Joliet file system, 100
junk mail, stopping in Windows Mail, 153-154

least access principle, 329
legacy games, 260
  Compatibility tab, 260-261
  Program Compatibility Wizard, 260-261
  virtualization, 261-265
legal issues, image metadata, 113
libraries, configuring media libraries, 224
Library mode (Windows Media Player 11), views, 189-190
Library Options tab (Windows Media Player 11), 183
Linux, dual-booting, 58
Live File System format, 312-314
Local Security Policy, 347-349
location, setting network locations, 293-294
Locked mode, 94
logging in, 332
lyrics, viewing in Windows Media Player 11, 198

M

Mail. *See* Windows Mail
mastered discs, creating, 313-316
Media Center. *See* Windows Media Center
media files, deleting, 183
media libraries, configuring Windows Media Center, 224
Media Player. *See* Windows Media Player 11
media sharing with Windows Media Player 11, 214-215
media types, support in Windows Media Center, 233
meetings, starting in Windows Meeting Space, 159-161
memory cards, synchronizing portable media players, 205
Memory Diagnostics, 19, 364-366
menu system
  in IE 7, 269-270
  new features, 8-9
  in Windows Media Player 11, 179-180
metadata, 16-17, 112-113
Microsoft Communities, accessing with Windows Mail, 154-155
Microsoft Management Console (MMC), 363
Microsoft Update, 356
Microsoft Zune digital media player, 203. *See also* portable media players
Migration Final Report, 70
Minpaso website (WEI ratings), 253-254
MMC (Microsoft Management Console), 363
monitors, tiling images across multiple, 88. *See also* display settings
Movie Maker. *See* Windows Movie Maker 6
movies in Windows Media Center. *See also* video
  recording, 227-228
  viewing, 225-227
moving
  between open programs, 92-94
  user accounts, 70
MSConfig (System Configuration), 367-371
MSDN IE Blog, 281
multimedia applications, new features, 9-12
multiple monitors, tiling images across, 88
music, listening in WMC, 228-230. *See also* audio
Music Explorer, 103-104
Music folder, 16
Music Library views (Windows Media Player 11), 189-190

N

Name menu in Explorer windows, 108
names of workgroups
  for network discovery, 296
  troubleshooting, 126
Navigation pane, hiding, 100
net command, 382
Net Nanny, 336
NetStumbler, 302
Network and Sharing Center, 294-295
  managing wireless network connections, 300-301
  network discovery, 294-297
  Network Explorer, 297
  Network Map, 298-300
  troubleshooting network connections, 302-303
network connections
  troubleshooting, 302-303
  Windows Easy Transfer, 64
network discovery, 294-297
Network Explorer, 297
network folders (Windows Easy Transfer), 64-65
Network Map, 298-300
network shares, accessing, 300
networking
  best practices, 306
  core Windows Vista features, 25
  practices to avoid, 306-307
  U.S. edition Windows Vista features, 27
networks
  setting location of, 293-294
  transferring from with Windows Easy Transfer, 69
  troubleshooting workgroup names, 126
  wireless networks, connecting to, 290-292
new features of Windows Vista
  communications applications, 13-15
  file management, 16-17
  games, 12-13
  GUI and desktop features, 7-8
  list of, 5-7
  menu system, 8-9
  multimedia applications, 9-12
  security, 20-22
  Start menu, 77-78
  system management, 17-19
  in Windows Movie Maker, 236-239

New Partition Wizard, 54
non-broadcast SSIDs, security, 293
Notification Area, customizing, 83-84
Now Playing menu in Windows Media Player 11, 191-192
NTFS, 46, 147-149

O

Offline Files, 136
Online Media (Windows Media Center), 232
Open menu in Explorer windows, 107
open programs, moving between, 92-94
OpenGL 3D audio standard, 259
OpenGL resources, 266
opening
  Command Prompt with administrator-level access, 382
  Control Panel, 122
  Explorer windows, 97-99
  ports in Windows Firewall, 345
  Windows Photo Gallery, 239
operating systems, installing to virtual machines, 262
Options dialog (Windows Media Player 11), 183
  Burn tab, 187
  Devices tab, 185, 188
  Library tab, 183
  Performance tab, 188
  Rip Music tab, 185-186
Organize menu in Explorer windows, 107
Outlook Express, moving to Windows Mail, 152-153. *See also* Windows Mail

P

Parental Controls, 21, 333-336
  Content Advisor versus, 284-285
  for playing DVDs, 211-213
participants, inviting with Windows Calendar, 165
Partition Commander, 40
Partition Magic, 40
partitions. *See* disk partitions
password reset disks, creating, 332
passwords
  setup, 48, 331
  social engineering, 350
  starting meetings, 160
  strong passwords, 49
  transferring, 69
PDF (Portable Document Format) file format, 12
performance
  3D driver settings, 258-259
  core Windows Vista features, 25
  ReadyBoost, 145-146
  Reliability and Performance Monitor, 375-378
Performance Diagnostic Console, 18
Performance Information and Tools dialog, 129-135
Performance Options tab (Windows Media Player 11), 188
Personalization dialog, 85-86
phishing filter (IE 7), 276-280
Phishing Incident Reporting and Termination (PIRT) Squad, 279
PhishTank information clearing house, 279
Photo Gallery. *See* Windows Photo Gallery
photos. *See also* images; Pictures Explorer; Windows Photo Gallery
  black-and-white photos, creating, 240
  image metadata, 112-113
  previewing, 102-103
  printing, 103
  rating, 112, 243
  tagging, 112, 241-243
physical hard disks, determining number of, 187
pictures. *See also* images; Pictures Explorer; Windows Photo Gallery
  for contacts, changing, 157
  for user accounts, changing, 331
  viewing in Windows Media Center, 231-232
  as visualizations in Windows Media Player 11, 194
Pictures Explorer, 16, 101
  image metadata, 112-113
  previewing photos, 102-103
  printing photos, 103
  Slide Show feature, 101-102
  tags, 112
PIRT (Phishing Incident Reporting and Termination) Squad, 279
Play menu (Windows Media Player 11), 180
playback controls (Windows Media Player 11), 177
playing
  games, 254-256
  media in portable media players, 203
  in Windows Media Player 11
    audio, 189
    DVD video, 211-213
    tips and tricks, 216-217
    TV recordings, 213
    video, 211
playlists in Windows Media Player 11
  adding TV recordings to, 214
  creating, 200-202, 211
Plays for Sure list, 202
plug-ins (Windows Media Player 11), 182
pop-up manager (IE 7), 280
port numbers, 346
portable devices, quality levels in Windows Media Player 11, 188
Portable Document Format (PDF) file format, 12
portable media players
  support in Windows Media Player 11, 202-207
  USB flash drives as, 204
  as USB flash drives, 207
ports
  opening in Windows Firewall, 345
  TCP and UDP ports, 346
Power button, 94
Power Options dialog, 127-128
Power Saver power setting, 127
power users, Windows Vista editions for, 30
predefined saved searches, 115-116
previewing photos, 102-103
previous versions, restoring files, 378
primary partitions, creating for dual-boot installations, 54-56
principle of least access, 329
printers
  security, denying access, 139
  sharing, 303-304
Printers folder, 138-139
printing
  photos, 103
  web pages in IE 7, 274-275
  Windows Calendar, 166
Problem Reports and Solutions applet (Control Panel), 366-367
processors
  support for, 30
  upgrades, 132
product key, installing Windows Vista, 43-44
Program Compatibility Wizard, 260-261
Program Library (Online Media in Windows Media Center), 232
programs. *See* applications
Protected Mode (IE 7), 20, 275-277
Public folder, sharing files, 118
publishing calendars, 165-166

Q-R

QtParted, 40
quality levels of portable devices, 188, 207
QuickTime, 178

radio, listening in Windows Media Center, 229-230
RAID arrays, installation options, 38
RAM
  Memory Diagnostics, 364-366
  support for, 30
rating photos and videos, 112, 243
ratings, Content Advisor and, 284-285
Ratings view (Windows Media Player 11), 190
ReadyBoost, 145
  games and, 253
  USB flash memory device compatibility, 145-146
rebuilding indexes, 116
receiving faxes, 168-169
Recent Items feature, Recently Changed versus, 108
Recently Added view (Windows Media Player 11), 189
Recently Changed feature, Recent Items versus, 108
recordable media, UDF (universal disk format) and, 313
recording formats (Windows Media Player 11), 186
recording TV and movies (Windows Media Center), 227-228
Recovery Environment, 378-380
  Command Prompt, 382
  Complete PC Backup and Restore Image, restoring, 383-384
  Startup Repair, 380-381
  System Restore, 381-382
regedit command, 382
Reliability and Performance Monitor, 375-378
reminders (Windows Calendar), 164
removable media drives. *See* USB flash drives
removing
  gadgets from Windows Sidebar, 75
  updates, 356
resolution settings, customizing, 85
restore points, creating, 95
restoring
  Complete PC Backup and Restore Image, 383-384
  files, 378. *See also* Recovery Environment
  hidden updates in Windows Update, 355
  Start menu default settings, 82
  with System Restore, 381-382
restrictions. *See* parental controls
right-clicking Explorer windows, 113-114
Rip Music Options tab (Windows Media Player 11), 185-186
ripping music in Windows Media Player 11, 194-195
robocopy command, 382
RSS feeds in IE 7, 272-273, 283
Run command, location of, 82

S

Safe Mode, starting in, 368
Safe Senders list (Windows Mail), 154
SATA drives, installation options, 38
Save for Web option (Adobe Photoshop Elements), 242
Saved Games Explorer, 106
saved searches
  customized, 116-117
  predefined, 115-116
scanning. *See also* Windows Fax and Scan
  documents, 169-170
  for spyware, 340-342
scheduling tasks, 361-364
screen saver settings, customizing, 89
screens. *See* display settings
Search (Windows Media Center), 233
search features
  Instant Desktop Search, 16
  on Start menu, 78-80
search settings (IE 7), 283
searches
  Indexing Options dialog, 128-129
  saved searches, 115-117
  Windows Live Search in IE 7, 269
  in Windows Media Player 11, 190-191
Searches Explorer, 106
secure logon, setting up, 332
security, 327-328
  address space load randomization (ASLR), 328
  best practices, 350-351
  BitLocker, 349
  core Windows Vista features, 25
  in IE 7, 275-281
  Local Security Policy, 347-349
  network discovery and, 295-296
  new features, 20-22
  of non-broadcast SSIDs, 293
  Parental Controls, 333-336
  passwords
    setup, 48
    social engineering, 350
    strong passwords, 49
    transferring, 69
  principle of least access, 329
  printers, denying access, 139
  UAC (User Account Control), 60, 329
  user accounts, 329-333
  User Accounts and Family Safety category (Control Panel), 329-330
  Windows CardSpace, 336-338
  Windows Defender, 340-342
  Windows Firewall, 342-347
  Windows Firewall with Advanced Security, 347
  Windows Security Center, 338-340
Security Center, Phishing Filter and, 280
selecting
  backup media, 321
  boot drives, 53
  transfer method (Windows Easy Transfer), 63-66
sending faxes, 168-169
settings, transferring. *See* Windows Easy Transfer
Shader Model 4.0, 13, 257
shaders in DirectX, 257
shadow copies, 19
sharing
  files (Public folder), 118
  folders and printers, 303-305
  media with Windows Media Player 11, 214-215
  programs or desktops in Windows Meeting Space, 160-162
Shortcuts Explorer, 106
shuffling media to portable media players, 205-207
shutdown command, 382
Shutdown mode, 94
Sidebar. *See* Windows Sidebar
size of disk partitions, 45
Size view in Explorer windows, 109
skins (Windows Media Player 11), 181
Sleep mode, 94
Slide Show feature (Pictures Explorer), 101-102
social engineering, 350
Software Explorer, 21, 341
song information, editing, 104

- songs. *See* audio; Music Explorer
- Songs view (Windows Media Player 11), 189
- sorting documents, 108-110
- sound. *See* audio
- Sound applet, 141
- sound effects settings, customizing, 89
- speakers, configuring Windows Media Center, 224
- Speech Recognition
  - customizing, 91-92
  - training, 95
- spyware, scanning for, 340-342
- SSIDs, non-broadcast, 293
- stacks in Windows Media Player 11, 189
- Standard user accounts, 329-331
- star ratings. *See* ratings
- Start menu
  - All Programs menu, 80-81
  - customizing, 81-82
  - enabling Classic Start menu, 83
  - icons, 79
  - new features, 8-9, 77-78
  - restoring default settings, 82
  - search features, 78-80
- starting DirectX Diagnostics, 257
- startup
  - in Safe Mode, 368
  - troubleshooting, 367-371, 380-381
- Startup Repair, 380-381
- stopping junk mail in Windows Mail, 153-154
- strong passwords, 49
- subscribing to RSS feeds, 272-273
- Sync Center, 137-138
- synchronizing
  - devices (Windows Media Center), 235
  - Windows Media Player 11 with portable media players, 204-207
- system administration. *See* Control Panel; Disk Management; ReadyBoost
- System Configuration (MSConfig), 367-371
- System Diagnostics report, creating, 376-378
- system diagnostics tools, 364
  - core Windows Vista features, 25
  - Device Manager, 370-375
  - Memory Diagnostics, 364-366
  - Problem Reports and Solutions, 366-367
  - Reliability and Performance Monitor, 375-378
  - System Configuration (MSConfig), 367-371
- system health report, creating, 376-378
- System Information utility, 134-135
- system management
  - new features, 17-19
  - U.S. edition Windows Vista features, 28
- System properties sheet, 59-60, 125-127
- System Restore, 95, 381-382
- SystemRescueCd, 40

T

- tab groups, Favorites as, 271
- tabbed browsing (IE 7), 268-269, 283
- tag information, editing in Windows Media Player 11, 196-199
- tags
  - Documents Explorer, 110-111
  - for photos, adding, 241-243
  - Pictures Explorer, 112
- Task Scheduler, 361-364
- Taskbar, customizing, 83
- taskkill command, 382
- tasklist command, 382
- tasks
  - basic tasks versus, 362
  - editing, 363-364
  - Windows Media Center, 233-234
- TCP ports, 346
- themes, customizing, 89
- tiling images across multiple monitors, 88
- time
  - 24-hour clock format, applying, 144
  - Date and Time applet, 143-144
- time limits filter (Parental Controls), 334-335
- toolbars, customizing, 83
- Tools menu (Windows Media Player 11), 180
- Track Info dialog (Windows Media Player 11), 197-198
- training speech recognition, 95
- transferring settings. *See* Windows Easy Transfer
- transparency settings (Aero), customizing, 87
- tree command, 382
- troubleshooting
  - access to shared folders from Windows XP, 304-305
  - add-ons (IE 7), 281
  - best practices, 384
  - core Windows Vista features, 25
  - deleted files in search results, 116
  - disk drive connections, 46
  - flash memory drives, 359
  - game audio, 259
  - hard disk drives, 359
  - legacy games, 260-265
  - network connections, 302-303
  - restoring files, 378. *See also* Recovery Environment
  - startup, 380-381
  - with system diagnostics tools, 364
    - Device Manager, 370-375
    - Memory Diagnostics, 364-366
    - Problem Reports and Solutions, 366-367
    - Reliability and Performance Monitor, 375-378
    - System Configuration (MSConfig), 367-371
  - workgroup names, 126
- trusted contacts, 158
- tunes. *See* audio
- TV
  - recording
    - configuring setup, 223
    - in Windows Media Center, 227-228
    - in Windows Media Player 11, 213-214
  - viewing in Windows Media Center, 225-227
  - Windows Movie Maker movie output settings for NTSC TVs, 238
- Type view in Explorer windows, 109

U

- U.S. edition of Windows Vista, features in, 26-29
- UAC (User Account Control), 20, 60, 329
  - configuring, 332-333
  - prompts, 330-331
- UDF (universal disk format), 312-314
- UDP ports, 346
- unblocking games in Windows Firewall, 344
- Universal Plug and Play (UPnP). *See* network discovery
- updates
  - with Microsoft Update, 356
  - removing, 356
  - viewing history, 356-357
  - of WEI ratings, 253
  - with Windows Update, 354-357

upgrade installs, 38
upgrading
    hardware, 131-133
    U.S. edition Windows Vista features, 29
    with Windows Anytime Upgrade, 135-136
    Windows Vista editions, 31
UPnP (Universal Plug and Play). *See* network discovery
USB Easy Transfer Cable, 63-64
USB flash drives
    compatibility with ReadyBoost, 145-146
    as portable media players, 204
    portable media players as, 207
    transferring from, 69
    troubleshooting, 359
    Windows Easy Transfer, 65
User Account Control (UAC), 20, 60, 329
    configuring, 332-333
    prompts, 330-331
user accounts, 95
    creating, 331-332
    explained, 329-331
    moving, 70
    password reset disk, creating, 332
    UAC (user account control), configuring, 332-333
User Accounts and Family Safety category (Control Panel), 329-330
user folders, structure of, 99-100
user interface. *See* GUI (graphical user interface)
usernames, setup, 48
utilities, core Windows Vista features, 25

V

versions of Windows Vista. *See* editions of Windows Vista
video. *See also* Windows Movie Maker
    DVDs, burning, 316-319
    rating, 243
    tags, adding, 243
    viewing in Windows Media Center, 231-232
    in Windows Media Player 11, 210-213, 217
Videos Explorer, 106
View menu (Windows Media Player 11), 180
viewing
    lyrics (Windows Media Player 11), 198
    RSS feeds, 272-273
    System properties window, 59-60
    TV and movies (Windows Media Center), 225-227
    TV recordings (Windows Media Player 11), 214
    update history, 356-357
    video (Windows Media Player 11), 210
views, Music Library views (Windows Media Player 11), 189-190
Views menu in Explorer windows, 107
Virtual Folders, 16
virtual machines, installing operating systems, 262
Virtual PC 2007, 261-265
virtualization, legacy games, 261-265
Vista. *See* Windows Vista
Vista Starter edition, 31
visual appearance settings, customizing, 87-88
visualizations in Windows Media Player 11, 192-194
VMWare Player, 264

W

WCS (Windows Color System) color profiles, 142
WDDM (Windows Device Driver Model), 236
web browsing. *See* IE 7
web filter (Parental Controls), 334
web pages, printing in IE 7, 274-275
WEI (Windows Experience Index) ratings, 252-254
    3D driver settings, 259
    improving, 131-133
    Performance Information and Tools dialog, 129-133
Welcome Center, 17-18, 124-125
WIA (Windows image acquisition) drivers, 167
windows. *See* Explorer windows
Windows Anytime Upgrade, 135-136
Windows Backup and Restore Center, 19, 319-320
    backup media, selecting, 321
    backup strategies, 320
    file and folder backups, creating, 322-324
    image backups, creating, 321-322
Windows Calendar, 14-15, 163
    appointments, 164
    integrating with Windows Mail, 155
    inviting participants, 165
    printing, 166
    publishing, importing and combining, 165-166
    reminders, 164
Windows CardSpace, 336-338
Windows Collaboration, 15
Windows Color System (WCS) color profiles, 142
Windows Contacts, 15, 155-156
    contact groups, creating, 158-159
    creating and importing contacts, 156-157
    integrating with Windows Mail, 155
Windows Defender, 21, 340-342
Windows Device Drive Model (WDDM), 236
Windows Device Manager, 370-375
Windows DVD Maker, 12, 316-319
Windows Easy Transfer, 18-19, 61-63
    collecting files for, 66-68
    creating disk for, 68
    Outlook Express to Windows Mail, 153
    transfer process, 69-71
        selecting, 63-66
Windows Easy Transfer Companion, 61
Windows Experience Index. *See* WEI ratings
Windows Fax and Scan, 15, 167
    configuring fax and sender settings, 168
    configuring fax service, 167-168
    scanning documents, 169-170
    sending and receiving faxes, 168-169
Windows Firewall, 342-347
Windows Firewall with Advanced Security, 347
Windows image acquisition (WIA) drivers, 167
Windows Live Messenger, 163
Windows Live Search in IE 7, 269
Windows Mail, 14, 151-152
    accessing Microsoft Communities, 154-155
    antiphishing, 154
    integration with Windows Contacts and Windows Calendar, 155
    junk mail, stopping, 153-154
    moving from Outlook Express, 152-153
Windows Media Center (WMC), 10-11, 219

- best and worst practices, 244
- configuring, 222-223
    - burning CD/DVD, 234-235
    - displays, 223-224
    - FM radio, 229-230
    - media libraries, 224
    - music, 228-230
    - Online Media, 232
    - options, 225
    - recording TV and movies, 227-228
    - Search, 233
    - speakers, 224
    - synchronizing devices, 235
    - tasks, 233-234
    - TV setup, 223
    - viewing pictures and videos, 231-232
    - viewing TV and movies, 225-227
- interface, 220
- media types, 233
- options for improvement, 221
- pre-setup checklist, 221-222

Windows Media Player 11, 9, 175
- audio, 189
    - burning to CD/DVD, 208-209
    - DRM (digital rights management), 199-200
    - editing tag information, 196-199
    - Music Library views, 189-190
    - Now Playing menu, 191-192
    - playing, 189
    - playlist creation, 200-202
    - portable media player support, 202-207
    - ripping music, 194-195
    - searching, 190-191
    - visualizations, 192-194
- enhancements, 182
- media sharing, 214-215
- Music Explorer integration with, 104
- Options dialog, 183-188
- plug-ins, 182
- skins, 181
- tips and tricks, 215-217
- TV recordings, 213-214
- user interface, 176-180
- video, 210-213

Windows Meeting Space, 159
- handouts, 162
- meetings, starting, 159-161
- sharing programs or desktops, 160-162
- wrapping up meetings, 163

Windows Mobility Center, 144

Windows Movie Maker, 9-10, 235-236
- best and worst practices, 244-245
- new features, 236-239
- WDDM, 236

Windows Photo Gallery, 10-11, 239
- best and worst practices, 245
- individual photos, 239-242
- opening, 239
- photo collections, 242-243
- tags, 112

Windows Security Center, 338-340

Windows Sidebar, 7
- configuring, 77
- gadgets, 74-76

Windows Update, 354-357

Windows Vista
- activating, 43, 60-61, 136
- configuring, 48-51
- desktop. *See* desktop
- editions of, 23-24
    - 64-bit versus 32-bit, 32-33
    - for emerging markets, 31
    - for European Union (EU), 31
    - features in, 24-29
    - Home Premium versus Home Basic, 30-31
    - for power users, 30
    - RAM and processor support, 30
    - upgrading, 31
- installing
    - clean installs, 37-48
    - dual-boot installations, 38, 53-58
    - installation options, 39
    - upgrade installs, 38
- new features
    - communications applications, 13-15
    - file management, 16-17
    - games, 12-13
    - GUI and desktop features, 7-8
    - list of, 5-7
    - menu system, 8-9
    - multimedia applications, 9-12
    - security, 20-22
    - system management, 17-19

Windows XP, troubleshooting access to shared folders, 304-305

Windows XP-based systems, adding to Network Map, 299

Wireless Network Connection Status dialog, 302

wireless networks
- connecting to, 290-292, 300-301
- setting network location, 293-294

WMC. *See* Windows Media Center

WMM. *See* Windows Movie Maker

WMP. *See* Windows Media Player 11

WordWheel search feature (Windows Media Player 11), 190-191

workgroup names
- for network discovery, 296
- troubleshooting, 126

X-Z

XPS (XML Paper Specification), 12

Year view (Windows Media Player 11), 189

zoom settings in IE 7, 273-274

Zune digital media player, 203. *See also* portable media players

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